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ABSTRACT

This project extended two previous projects which were designed to assist teachers in building the necessary skills to plan, develop, and implement competency-based vocational education (CBVE). In addition to released time for instructors, the project provided the funds necessary to form an articulation team effort among Pennsylvania's Reading Muhlenberg Vocational School, Schuylkill County Area Vocational Technical School, and the Berks Vocational-Technical School, which culminated in a large-group, intensified workshop comprised of five on-site training sessions and five off-site work sessions. The following outcomes and products resulted from the project: (1) teachers participated in 4,032 hours of released time from the classrooms during which they developed various CBVE skills; (2) two full-time substitute teachers were provided to cover classrooms during released time; (3) consumerism and job keeping/seeking curriculums were developed and implemented by the fulltime substitutes; (4) sample modules were developed for pilot testing; (5) supportive audiovisual materials were developed for some modules; and (6) the Staff Training Educational Plan (STEP) was developed to support the Competency Based Vocational Education Progress Chart developed by the Research Coordinating Unit of the Pennsylvania Department of Education. (Many of the materials used to conduct the staff training are included in the appendixes to the report.) (KC)

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FINAL REPORT

IN-SERVICE TRAINING FOR INSTRUCTORS DESIGNED TO
BUILD THE NECESSARY SKILLS NEEDED TO PLAN, DEVELOP,
AND IMPLEMENT COMPETENCY-BASED VOCATIONAL EDUCATION.

(Contract Number 84-0806)

Doris M. Epler
Curriculum Supervisor

BERKS VOCATIONAL-TECHNICAL SCHOOL
2900 St. Lawrence Avenue
Reading, PA 19606

7/31/81

PENNSYLVANIA DEPARTMENT OF EDUCATION
BUREAU OF RESEARCH AND EVALUATION

RESEARCH COORDINATING UNIT
FOR VOCATIONAL EDUCATION

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Outline for Program Performance Reports
Vocational Education-Personnel Training

Project No. 84-9815
Educational Agency BERKS VOCATIONAL-TECHNICAL SCHOOL
Address & Telephone 2900 St. Lawrence Ave., Reading, PA 19606 (215) 779-7111
Project Director & Title Doris M. Epler, Curriculum Supervisor
Funding Period From 7/1/80 Through 6/30/81
State or Federal Funding \$ 32,299
Total Funds Expended \$ 38,317

Accomplishments (During the period meeting the objectives)

Major Activities and Events (Enclose a program)

Problems (Describe any departure, including timing from the original project plan)

Publicity Activities (Attach Examples)

Dissemination Activities

Progress on Data Collection and Evaluation Plans & Procedures

Other Activities

Staff Employment and Utilization

(If there is nothing to report in any of the areas listed above write N/A)

Participant Report

Participants

Administration	<u>1</u>
Guidance Counselors	<u>3</u>
Teacher Counselors	<u>3</u>
Teacher Trainees	<u>3</u>
Teachers	<u>87</u>
Para Professionals	<u> </u>
Others (Specify)	<u> </u>
Total	<u>94</u>

Return to:

Charles F. Lebo
Department of Education
Box 911
Harrisburg, PA 17126
(717) 787-2475

ACKNOWLEDGEMENTS:

The work which was accomplished under this project would not have been possible without the assistance of many people.

Special thanks goes to Phoebe Hopkins for her outstanding work in assisting the instructors in developing the skills necessary for eventual implementation of competency-based vocational education curriculum. Her patience and dedication to the objectives of this project will long be appreciated.

Secondly, a round of applause goes to the members of the articulation team who helped put all the pieces of this project together which resulted not only in presenting our instructors with in-service activities in order to address the many components of competency-based vocational education, but they played a vital role in fostering a better understanding between our schools and opened lines of communication heretofore ignored. These members were:

1. Joseph Grande, Reading Muhlenberg Vocational School
2. Edward Lyba, Schuylkill County A.V.T.S.
3. Janine Lombardo, Reading Area Community College

Dr. Richard Adamsky, Temple University, served as our special advisor and resource person. Dick will always be remembered by the project leaders for his dedication to the philosophy of vocational education.

And last, but not least, we wish to thank the Research Coordinating Unit for Vocational Education of the Pennsylvania Department of Education for providing the funds which made this project possible.

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ABSTRACT:

84-0806: In-service Training for Instructors Designed to Build the Necessary Skills Needed to Plan, Develop and Implement Competency-Based Vocational Education.

Doris M. Epler
Berks Vocational-Technical School
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\$32,299 State or Federal
\$38,317 Local
7/1/80 to 6/30/81

The purpose of this project was to extend the offerings made possible under projects 85-9807 and 84-9815 which were designed to assist teachers in building the necessary skills in order to plan, develop and implement competency-based vocational education. In addition to release time for instructors, this project provided the funds necessary to form an articulation team effort between Reading Muhlenberg Vocational School, Schuylkill County A.V.T.S. and the Berks Vocational-Technical School, which culminated in a large group intensified workshop which consisted of five (5) on-site training sessions and five (5) off-site work sessions.

OBJECTIVES:

1. To conduct in-service training to help instructors develop the competencies necessary to plan, develop and integrate competency-based materials into their present programs.
2. To conduct in-service training to help instructors develop the necessary skills to prepare for pilot testing of competency-based materials and approaches for managing such a system.
3. To provide for substitute instructors in order to give regular instructors the necessary release time to plan, develop, integrate and implement competency-based curriculum. Permanent full-time substitute instructors will be hired so that all classrooms are properly supervised while the regular instructor is receiving in-service.
4. To prepare modules for specific units of instruction in order to prepare for the pilot testing stage of the implementation of competency-based curriculum.
5. To pilot test the developed materials to build a data base from which decisions can be made to determine whether the necessary skills have been developed by the instructor.

OUTCOMES:

1. Teachers participated in 4,032 hours (672 days) of release time from the classrooms during which time they developed various C.B.V.E. skills.
2. Two (2) full-time substitute teachers were provided to cover classrooms during release time.

OUTCOMES (continued):

3. Consumerism and job keeping/seeking curriculum was developed and implemented by the full-time substitutes.
4. Sample modules were developed for pilot testing.
5. Supportive A.V. materials were developed for some modules.
6. The STEP (Staff Training Educational Plan) was developed to support the Competency-Based Vocational Education Progress Chart (Sections A, B and C) developed by the Research Coordinating Unit, Pennsylvania Department of Education.

AUDIENCE:

The resulting reports and curriculum materials are useful to instructors and curriculum planners of vocational-technical schools or programs.

PUBLICATIONS AND AVAILABLE MATERIALS:

- ...Final Report
- ...Sample Modules
- ...Sample A.V. Material
- ...STEP materials

SECTION II: BACKGROUND:

On March 23, 1979, the Joint Operating Committee of the Berks Vocational-Technical School passed a resolution (see Appendix A) supporting competency-based vocational education (C.B.V.E.) Up to this point in time, most of the curriculum had been developed by the classroom instructors with some assistance provided by administrators and craft advisory committee members. Although many of the components of a C.B.V.E. program were to be found, most programs were time based and geared towards students moving through various segments or units of instruction more or less simultaneously.

It became apparent that, if our school wanted to implement a C.B.V.E. program, that the proper attitudes, skills and knowledge would have to be developed in order to implement this highly personalized method of the training/learning process.

This project, 84-0806, was preceded by projects 85-9807 and 84-9815, which were both designed to provide release time for instructors so that they could participate in skill-building activities. Project 84-0806 also provided release time, but the unique outgrowth of this project was the birth of an articulated approach for C.B.V.E. skill building.

The C.B.V.E. Project Directors involved were:

Joseph Grande, Reading-Muhlenberg Vocational School
Edward Lyba, Schuylkill County A.V.T.S.
Jeanine Lombardo, Reading Area Community College
Doris M. Epler, Berks Vocational-Technical School

These Project Directors held several planning sessions in the summer of 1981 in order to develop a team philosophy, practices and procedures. The constraints of this approach had to be identified before scheduling could begin. These consisted of the following:

1. Geographic locations of the participating institutions.
2. Selection of six (6) occupational areas in which to begin the articulated concept.
3. Individual school calendars.
4. Teacher organization contracts.

BACKGROUND (Continued):

5. Availability of Project Director's time.
6. Availability of instructor release time.
7. Budgetary constraints and restrictions.
8. The different levels of exposure to the C.B.V.E. concept which the instructors had.
9. Possible personality clashes.
10. Administrative concept of the C.B.V.E. approach.
11. Correlation of the individual objectives of the C.B.V.E. project.

After several meetings, goals were defined, teams identified and a tentative schedule for release time was developed. (See Appendix B for a sample)

SECTION III: METHODS

OBJECTIVES:

1. To conduct in-service training to help instructors develop the competencies necessary to plan, develop and integrate competency-based materials into their present programs.
2. To conduct in-service training to help instructors develop the necessary skills to prepare for pilot testing of competency-based materials and approaches for managing such a system.
3. To provide for substitute instructors in order to give regular instructors the necessary release time. Permanent full-time substitutes will be hired so that all classrooms are properly supervised and meaningful instruction will occur during the regular instructor's absence.
4. To prepare modules for specific units of instruction in order to prepare for the pilot testing stage of the implementation of C.B.V.E.
5. To pilot test developed materials to build a data base from which decisions can be made to determine whether the necessary skills have been developed by the instructors.

PROCEDURE:

The instructors of Berks Vocational-Technical School had previous exposure to the C.B.V.E. concept. However, the articulated approach was new and this had to be clarified. At the opening in-service day, September 2, 1980, time was spent explaining the concept, identifying the team members and distributing

PROCEDURE (continued):

the first release time schedule. While the greatest emphasis was placed on the articulation team members all instructors received some release time during the year.

TABLE 1
TEAM MEMBERS

<u>COURSE AREAS</u>	<u>Sch. Co.</u>	<u>NUMBER OF INSTRUCTORS</u>			
		<u>Rdg. Muhl.</u>	<u>Berks</u>	<u>RACC</u>	
1. Auto Body	2	2	2	-	
2. Auto Mechanics	3	3	3	-	
3. Data Processing	1	2	2	1	
4. Food Preparation	2	2	2	-	
5. Horticulture	1	1	1	-	
6. Machine Shop	<u>2</u>	<u>2</u>	<u>2</u>	<u>-</u>	
TOTAL	11	12	12	1	

GRAND TOTAL = 36

SHORT RANGE PLANS:

Our short range plans consisted of seven (7) basic steps. They were as follows:

1. Conduct in-service activities for instructors which will assist them in developing skills necessary to understand what C.B.V.E. is and why we need C.B.V.E.

(A) Team approach: The first meeting with each occupational area (as shown in Table 1) was devoted to defining what C.B.V.E. is and what it is not. Those instructors who had no previous C.B.V.E. exposure were given a module entitled What is Competency-Based Vocational Education? which was based on What is Competency-Based Vocational Education (CBVE)?, Division of Vocational-Technical Education, Maryland State Department of Education, EPDA Grant G0037700150 (Appendix D). A great deal

SHORT RANGE PLANS (continued):

of time was devoted to dispelling fears and handling the apprehension felt by some instructors.

- (B) Individual Team Instructors: One-to-one sessions were held with individual instructors in order to review the module identified in (A). This also allowed concerns to be discussed in a non-threatening environment.
- (C) Workshop: An announcement was released to all instructors (Appendix E) outlining the details of a ten (10) day workshop devoted to C.B.V.E. On an optional basis, 32 instructors from Berks Vocational-Technical School requested to attend (Appendix F). Reading Muhlenberg had 30 instructors participating and Schuylkill County had 12 for a grand total of 74 instructors.
- (D) Individual Instructors Not Team Members: Release time was scheduled during the year to provide one-on-one or small group sessions for instructors who were not members of the articulation team.

Reading Eagle, Sunday, April 26, 1981

Vo-Tech Teachers Plan Seminars

A series of five seminars on "Competency Based Vocational Education" will be conducted for vocational-technical school teachers in Berks and Schuylkill counties at the Reading-Muhlenberg Area Vocational-Technical School.

The programs, starting Tuesday, will be held Thursday, Tuesday, May 5; Thursday, May 7, and Tuesday, May 12. Hours are 4 to 7 p.m.

The object of the seminars is to rein-

force staff awareness and understanding of the CBVE pilot project now under way. The project deals with improving teaching methods and reaching the individual in a better way.

About 75 teachers, state officials and personnel from Temple University in Philadelphia are expected to attend the sessions. The program is being conducted under the direction of the state Department of Education.

2. Build in the activities in Step 1 so that instructors will know the elements of C.B.V.E. and how the systems approach will allow them to integrate and implement C.B.V.E. into their on-going instructional programs.

SHORT RANGE PLANS (continued):

- (A) Records were kept on all instructors in order to establish how many times they received release time (Appendix C). Although the original intent was that all the instructors in the articulation team should receive the same number of days, this was not always possible. Therefore, some instructors received more than the planned ten (10) days total time and some received less.
 - (B) Planning sessions were conducted throughout the year with members of the Curriculum Department. At this time, the individualized progress and/or problems of each instructor were discussed and plans were made to provide the assistance and/or materials needed to address those concerns.
 - (C) STEP: As an outgrowth of our concern in being able to provide accountability for the development of the C.B.V.E. skills identified by the Research Coordinating Unit (Appendix G), STEP (Staff Training Educational Plan) was born. At the present time, STEP only covers sections A, B and C. (Appendix H) However, during the summer of 1981, Section D thru J will be developed.
 - (D) Instructor's Files: Files were kept on each instructor so that we could establish progress and build an accountability base. The materials developed will also provide documentation necessary for an State evaluation scheduled in February 1982.
3. Assist instructors in the development of individual learning packets.
- (A) This was done by having the teacher choose a particular area within their instructional program which they wanted to deal with. The skill building sessions were built around each instructor's unique needs while at the same time addressing all of the C.B.V.E. skills

SHORT RANGE PLANS (continued):

identified by the RCU. This approach allowed us to implement an individualized plan to address individual instruction. In this manner, we were able to deal with instructors no matter where their abilities were on the continuum which ranged from beginning instructors with few college courses and little classroom experience to those with many years of teaching experience and holding various degrees and/or certification.

- (B) Activities were implemented which built into an activity the previous year which allowed the instructors to develop audio-visual materials to support a learning packet. Some of these were pilot tested with regular vocational students, academic students and special needs students.

4. Identify "ready-made" materials which instructors will be able to integrate into their C.B.V.E. programs.

- (A) Present audio visuals were identified and evaluated for their acceptance into the C.B.V.E. approach.
- (B) Instructors were allowed to peruse AV catalogs and order materials on a "review basis" (see Appendix I for sample).
- (C) The curriculum supervisor participated in the "Study Tour of Exemplary Programs: Serving All Students Through Competency-Based Vocational Education", held in Ft. Mitchell, Kentucky from March 31, to April 2, 1981. The visitation sites included in this program were Northern Kentucky Vocational School, Chapman Academic-Vocational Project and Kenton County Area Vocational Educational Center (Appendix J). Task lists and sample modules were shared by the faculties and these in turn were given to the appropriate teachers at Berks. A special debriefing session was held with each articulation team in order to present the instructors with an

SHORT RANGE PLANS (continued):

opportunity for a question and answer session on practices and procedures used in Kentucky.

5. Assist instructors to identify services such as V-TECS, VEIN, PRISE, RISE, PDE, etc. where materials exist which may be helpful in developing C.B.V.E. materials.

- (A) V-TECS catalogs were secured for all available areas (See STEP, Section B).

- (B) Handouts describing the services of VEIN and how to go about securing materials were distributed to all instructors.

- (C) Dr. Adamsky, Temple University and C.B.V.E. Coordinator provided us with several 916 programs. These are kept on file at the Curriculum Office and are available for duplication to other vocational-technical schools.

6. Assist instructors in involving the Craft Advisory Committees in the various stages of the development of C.B.V.E. materials.

- (A) We provided service such as typing, editing and reproducing task lists for Craft Committee approval. For those who had modules to show the committee members, these were also reproduced. The Craft Committee used evaluation sheets to show approval, modification or rejection of any work submitted to them. (See Appendix L)

- (B) An audio visual presentation was designed and developed which consisted of a slide/tape explanation of C.B.V.E. to be shown to the members of the various craft advisory committees. This presentation will be rotated until all committees have an opportunity to see it. Two of our instructors developed this two projector slide/tape show to meet some course requirements for Temple University while serving as part-time Curriculum Interns. My thanks go to Rein Buerkert and Harry Stuebner for this very professional audio-visual presentation!

SHORT RANGE PLANS (continued):

7. Provide substitute instructors so that regular instructors may be released from the classroom in order to work, undisturbed, in developing C.B.V.E. skills and materials.
 - (A) Two (2) full-time substitute instructors were hired to replace the regular instructors when they received release time. These instructors dealt with Consumerism Skills and Job Seeking/Keeping skills (Appendix M). A memorandum explaining the function of these people, along with a Substitute Information Form, was sent to all instructors so that we could proceed with the C.B.V.E. project with as little interruption to the learning process as possible (Appendix P).
 - (B) The instructors worked in articulation groups or on a one-to-one basis developing and documenting their C.B.V.E. skills.
 - (C) The instructors were also encouraged to share their experiences with other vocational schools (Appendix N). Several groups made on-site visitations to see the process of the articulation concept and to speak to individual instructors and make informal observations.

SECTION IV: Analysis

Objective 1: To conduct in-service training to help instructors develop the competencies necessary to plan, develop and integrate competency-based materials into their present programs.

This objective was met by providing release time for the instructors (Appendix C). They were provided with working space, resource people, supportive curriculum materials etc. which were designed to meet their individual needs. In addition to this release time, they were provided with the opportunity to participate in a ten-day workshop described under Short Range Plans 1 - C.

SECTION IV: Analysis (continued)

Objective 2: To conduct in-service training to help instructors develop the necessary skills to prepare for pilot testing of competency-based materials and approaches for managing such a system.

This objective was met part way. We felt that providing the instructors at this early stage with a complete management system would not be very productive. We answered their questions and tried to alleviate their fears regarding recordkeeping, but we did not expose them to the full management system for C.B.V.E. All of the instructors were made aware that they would have input into constructing the management system as well as the records to keep track of all of the competencies for each student. They were also reassured that they would have input into designing a new type of diploma which would list the competencies that the student was able to obtain. We did however, address the skills needed by those instructors who were ready to pilot test some materials. All instructors will receive help to plan for the orientation of students which will be necessary if C.B.V.E. is to be successful.

Objective 3: To provide substitute instructors in order to give regular instructors the necessary release time. Permanent full-time instructors will be hired so that all classrooms are properly supervised and meaningful instruction is occurring during the regular instructor's absence.

This objective was fully met. Please refer to Short Range Plans 7-A for the methods employed.

Objective 4: To prepare modules for specific units of instruction in order to prepare for the pilot testing stage of the implementation of C.B.V.E. Most of the instructors produced several modules during their release time. These will be typed and made camera ready during the

Objective 4 (continued):

summer of 1981 for pilot testing in the fall of 1981. The modules range in size from only a few pages and one or two enabling objectives to those which cover 10 to 12 enabling objectives. Forms were designed and colored coded which all participants in the articulation project will use so that our materials will be transferrable and the articulation between our educational institutions will be possible. A numbered coding system was also designed which will enable instant identification of all individual sheets (See Appendix 0).

Objective 5: To pilot test developed materials to build a data base from which decisions can be made to determine whether the necessary skills have been developed by the instructors.

We were able to pilot test modules in several classrooms. We felt that more time was needed for the instructors not only to have the hardcopy modules in hand, but to feel comfortable with the system. Rather than rush into this phase, it was decided to pilot test the majority of materials during the 1981-82 school year. Some modules in Hand Tools will be piloted by one of our regular instructors during the summer with students who are participating in the Youth Employment Training Program.

STAFF UTILIZATION:

The staff of the Curriculum Department consisted of five (5) people. The full-time Curriculum Supervisor, Doris M. Epler and one part-time Curriculum Intern, Phoebe Hopkins, one full-time Curriculum Materials Developer, Linda Fanning and two (2) full-time substitute instructors, David Deirolf and Joanne Longenecker. While the Curriculum Supervisor was responsible for the overall organization and direction of the project, the intern worked directly with individual instructors

STAFF UTILIZATION (continued):

and/or small groups. The intern was responsible for completing records on the involvement of the instructors and reporting to the Curriculum Supervisor. Progress meetings were held frequently between the five staff members at which time the goals and objectives of the project were discussed and plans were made for their achievement. Schedules were developed in order to keep all parties informed regarding who was working with which intern and which substitute was taking their place in the classroom. Overall communications was a vital part of the total effort by the staff. Other members of the guidance and administrative staff served as advisors and counselors to the project.

CONCLUSIONS AND RECOMMENDATIONS:

It is our conclusion that this project was an overwhelming success. Recommendations for changes and/or future considerations are as follows:

1. Future projects must place more emphasis on educating the administrators and the Joint Operating Committee so that these people would better be able to appreciate the complexity of the C.B.V.E. movement and be able to identify the ramifications this project has on the educational program and budget construction. In response to this concern, the Curriculum Department is planning to conduct a C.B.V.E. in-service program for the administrators of Berks Vocational-Technical School in August of 1981.
2. The articulation movement now under way with Berks and Schuylkill County must continue in order to "share the wealth" of both materials and people.
3. Provision must be made in future projects for "technical" assistance. That is, people who will be able to take the materials which have

CONCLUSIONS AND RECOMMENDATIONS (continued):

been developed by the instructors and get them "camera ready".

It will do us no good to develop C.B.V.E. skills in our instructors and then prohibit the C.B.V.E. movement by not providing the modules which are the heart of C.B.V.E.

4. State funding should be increased to provide more workshops during the summer months to be conducted by local articulation teams. This would help to bring about the continuity needed for implementation of C.B.V.E.

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(Appendix A)

C.B.V.E. Resolutions

In February of 1979, the Berks Vocational-Technical School Joint Operating Committee adopted the following resolution:

"Be it resolved that the Joint Operating Committee of Berks Vocational-Technical School is aware of the importance of competency-based education in establishing programs which are responsive to the individual needs of the students, while at the same time, addressing the ever-changing needs of the community which our educational institution serves. We encourage the planning, developing and implementing of competency-based curriculum in a systematic manner so that our educational programs will be highly accountable to all participants."



BERKS VOCATIONAL-TECHNICAL SCHOOL

AN EQUAL OPPORTUNITY EMPLOYER

2900 St. Lawrence Avenue
Antietam Valley Center
Reading, PA 19606
(215) 779-7111

MEMORANDUM

TO: All Instructors
FROM: Doris M. Epler
RE: Attached STEP/C.B.V.E. Schedule
(April 6 to May 15, 1981)
DATE: March 31, 1981

Attached is the schedule for assigned release time for teachers to participate in in-service activities involving STEP/CBVE. Please check your assigned day and prepare the following:

- (1) Check your STEP program to identify your activities for the day.
- (2) Gather all necessary documentation.
- (3) Prepare classroom activities to occur in your absence. Remember NO POWER EQUIPMENT MAY BE USED!
- (4) Report to Antietam on your assigned day at 8:30 A.M. and check the announcement board in the lobby for the room number.
- (5) Phoebe Hopkins will be available on a part-time basis to provide assistance. However, your STEP plan will allow you to proceed on your own when she is not scheduled.
- (6) I will try to contact everyone BEFORE your scheduled day to help determine your goals and objectives for the day. However, due to other commitments, this may not always be possible. Therefore, rely on your STEP program for direction.
- (7) The schedule for May 15 to May 29, 1981 will be released near the end of April.

Feel free to contact me at Antietam anytime, phone 779-7111, extension 203.

DME/gd

Attachment

BERKS VOCATIONAL-TECHNICAL SCHOOL

AN EQUAL OPPORTUNITY EMPLOYER

2900 St. Lawrence Avenue
Antietam Valley Center
Reading, PA 19606
(215) 779-7111

C.B.V.E. / STEP SCHEDULE

<u>DATE</u>	<u>EAST CENTER</u>	<u>WEST CENTER</u>	<u>GROUP SESSION</u>	<u>WORK SESSION</u>
April 6	J. Burinsky*			B201 - Antietam
	J. Lessig	K. Davis		B201 - Antietam
April 7	G. Henninger**			
April 8	H. Bottiglieri	H. Stuebner	All4 - Antietam	
April 9	J. Nawoczinski	H. Tobias	Reading-Muhlenberg	
April 10	B. Lynch	L. Rahn		B201 - Antietam
	B. Hughes			
	R. Emerich			
April 13	M. Swiderski	M. Keiser		B201 - Antietam
		D. Jenkins		B201 - Antietam
April 14	K. Reinert	H. Bucks		B201 - Antietam
April 15	L. Shober	A. Happel		B201 - Antietam
April 16	D. Delaney	J. Dietz		
		J. Fromuth		B201 - Antietam
April 17	- - - - -	H O L I D A Y - - - - -		
April 20	- - - - -	H O L I D A Y - - - - -		
April 21	J. Unger	J. Ebling		A108 - Antietam
April 22	J. Cutler	L. Sayer		B201 - Antietam
April 23	W. Becker	F. Butkus		B201 - Antietam
April 24	S. Dierolf	R. Dyanzio		B201 - Antietam
April 27	H. Bottiglieri	H. Stuebner		B201 - Antietam
April 28	N. Bishop	M. Kintzer		B201 - Antietam
April 29	G. Smith	L. Christman		Itinerant Rm. Antietam
April 30	C. Cartwright	R. Buerkert		B201 - Antietam
May 1	D. Clymer	B. McElwee		B201 - Antietam
May 4	D. Witman	D. Keiser	South Sch.	
May 5	G. Spurr	L. Davis		
	M. James	J. Schmehl*	Reading-Muhlenberg	
May 6	- - - - -	O P E N - - - - -		
May 7	J. Nawoczinski	M. Driver	Reading-Muhlenberg	
May 8	E. Strickler	J. Oesterling		B201 - Antietam
		D. Casciano		
May 11	D. George	M. Hechinger		B201 - Antietam
May 12	K. Richards	L. Moore	Reading-Muhlenberg	
May 13	R. Dunkelberger	B. Karver		B202 - Antietam
May 14	R. Kreider	R. Hill	North Schuylkill	
May 15	C. Lambdin	J. Swope		B201 - Antietam

DME/gd

*Vo-Tech supply substitute for this shop

**J. Longenecker to Wyomissing High School - Vo-Tech will need to provide substitute

<u>INSTRUCTOR</u>	<u>SHOP</u>	<u>HOURS</u>	<u>DAYS</u>
J. Nawoczinski	Horticulture	144	24
K. Richards	Food Preparation	132	22
L. Moore	" "	114	19
G. Spurr	Auto Mechanics	60	10
L. Davis	" "	120	20
M. James	" "	126	21
J. Schmehl	" "	126	21
R. Gilbert	" "	30	5
H. Bottiglieri	Auto Body	72	12
H. Stuebner	" "	132	22
D. Witman	Data Processing	126	21
D. Keiser	" "	126	21
R. Kreider	Machine Shop	120	20
R. Hill	" "	54	9
N. Bishop	Cosmetology	81	13 1/2
M. Kintzer	"	75	12 1/2
J. Ebling	"	75	12 1/2
J. Unger	"	75	12 1/2
L. Christman	Child Care	72	12
P. Dunkleberger	Health Assistant	90	15
B. Karver	" "	72	12
R. Emerick	Driver Ed-Sp.	48	8
B. Hughes	" "	48	8
T. Segro	Clothing	12	2
C. Franklin	"	12	2
D. George	Bldg. Maintenance	12	2
M. Hechinger	" "	12	2
C. Henninger	Dental Assistant	72	12
C. Lambdin	Special Needs	30	5
B. Lynch	" "	66	11
D. Delaney	" "	6	1
D. Clymer	" "	6	1
E. Strickler	" "	6	1
M. Swiderski	Carpentry	66	11
M. Keiser	"	66	11
D. Jenkin	"	6	1
L. Rahn	Foundry	6	1
T. Marseglia	Ag. Mech	6	1
B. McElwee	Painting	72	12

<u>INSTRUCTOR</u>	<u>SHOP</u>	<u>HOURS</u>	<u>DAYS</u>
J. Burinsky	Drafting	6	1
J. Lessig	"	6	1
K. Davis	"	6	1
R. Buerkert	Printing	66	11
H. Tobias	D.O.E.	6	1
J. Dietz	"	6	1
R. Fromuth	"	66	11
J. Oesterling	"	66	11
D. Casciano	"	60	10
J. Swope	"	66	11
M. Driver	"	66	11
K. Reinert	Electronics	6	1
H. Buckss	"	66	11
A. Happel	Electricity	6	1
L. Shober	"	66	11
W. Becker	Welding	6	1
F. Butkus	"	6	1
R. Leinbach	Diesel Mech.	72	12
G. Smith	Plumbing	6	1
D. Rathman	Career Math	120	20
W. Straw	" "	120	20
D. Wiswesser	" "	72	12
K. Snyder	" "	72	12
D. Dierolf	Sub	210	35
J. Longenecker	"	210	35

NO HOURS:

C. Cortwright - Was ill when scheduled
 R. Dyanzio - Interns were ill when scheduled
 R. Roth - On sabbatical leave
 M. Vardjan - Course discontinued
 A. Styer - Long Term Substitute

SUMMARY OF WORKSHOP - 4/28/81 to 5/12/81WORKSHOP

Bishop, N.	60
Buerkert, R.	60
Bucks, H.	60
Casciano, D.	54
Christman, L.	60
Davis, L.	60
Driver, M.	60
Dunkleberger, R.	54
Ebling, J.	60
Fromuth, R.	60
Hemninger, G.	60
James, M.	60
Karver, B.	60
Keiser, D.	60
Keiser, M.	60
Keutzer, M.	60
Kreider, R.	60
Leinbach, R.	60
Lynch, B.	60
McElwee, B.	60
Moore, L.	54
Nawoczinski, J.	60
Oesterling, J.	60
Richards, K.	60
Schmehl, J.	60
Shober, I.	60
Stuebner, H.	60
Swiderski, M.	60
Swope, J.	60
Unger, J.	60
Witman, D.	60

DESCRIPTION

This workshop consisted of five (5) training sessions on site and five (5) off-site work sessions. The basic materials used were the Professional Preparation Modules developed by Temple University. The activities consisted of individual, as well as both small and large group experiences. Dr. Richard Adamsky of Temple University was our Keynote Presenter.

IMPACT

This workshop allowed those people who had already been exposed to the C.B.V.E. concept to share their knowledge and expertise with others. It also allowed the people who will be working on the articulation team next year to be exposed to the concepts in a non-threatening environment.

The participants' evaluation of this workshop were excellent. We were also able to glean some suggestions to consider for implementation during 81-82.

"WHAT IS COMPETENCY-BASED VOCATIONAL EDUCATION?"

C. B. V. E. ? ? ?

Terminal Objective:

The instructor will identify the characteristics of C.B.V.E., evaluate his/her existing program, and respond to a problem solving activity which identifies how C.B.V.E. can be utilized to obtain more effective educational planning and implementation.

Source of Reference:

"What is Competency-Based Vocational Education (CBVE)?", Division of Vocational-Technical Education, Maryland State Department of Education. E.P.D.A. Grant G0037700150.

BERKS VOCATIONAL-TECHNICAL SCHOOL
Curriculum Department
Doris M. Epler

PURPOSE

When you have completed this booklet, you will be able to: (1) discuss the concepts, characteristics, advantages, and concerns of competency-based vocational education (CBVE); and (2) use your knowledge of CBVE to improve the teaching-learning processes in your classroom.

INTRODUCTION

Competency-based education is intended to improve the teaching-learning process. It is a means for clarification and structuring expected outcomes so that the design of educational procedures and the evaluation of outcomes may be greatly enhanced.

Competency-based instruction is not the answer to all of education's problems. It is, however, another step in the direction of more effective educational planning which utilizes greater clarity in what is expected in the program and from the student.

OBJECTIVES:

Upon completion of this module, you will be able to perform the following:

1. Given information on CBVE, identify seven characteristics of CBVE.
2. Evaluate your existing program.
3. Given a problem encountered in a vocational education setting, write the solution to the problems which CBVE can provide in order to obtain more effective educational planning and implementation through the use of a competency-based system.

LEARNING ACTIVITIES:

Perform the following activities. Check them off as you do them.

_____ Read Information Sheet i thru iv, "Competency-Based Education: Is It Really Better?".

_____ Read Information Section I, page 3, "What is Competency-Based Vocational Education?".

_____ Complete the Test Your Knowledge section on characteristics of CBVE.

_____ Complete the Self-Rating Evaluation on the level of competency-based existing in your present program.

_____ Read Information Section II on the "Advantages, Misconception, and Concepts of CBVE.".

_____ Test Your Knowledge on solving problems with CBVE.

_____ Post-Test Activity: Test your knowledge of this module by completing the post-test.

Information Section I

WHAT IS COMPETENCY-BASED VOCATIONAL EDUCATION?

Competency-based vocational education (CBVE) is an instructional process aimed at improving the teaching-learning process. CBVE can also be called competency-based education or instruction, performance-based education or instruction, criterion-referenced instruction, mastery learning, or proficiency-based education. Basically, these terms all have the same meaning. By definition, CBVE refers to occupational programs in which required behaviors (competencies) and performance standards are specified in advance of instruction.

A competency is defined as the ability (including knowledges, skills, and/or attitudes) to perform a specific task successfully to meet a specified performance standard. A competency statement contains an action verb and a noun (i.e., fill out a job application).

The basic intent of CBVE is to aid student achievement of required behaviors or competencies needed for successful on-the-job performance. Several aspects of CBVE distinguish it from traditional instruction. These include:

1. Analysis of the subject matter content is in terms of performance competencies.
2. Diagnosis of pre-instructional student behaviors (pre-testing).
3. More use of individualized instructional strategies.
4. Use of criterion-referenced measurement instruments for assessing performance tasks.

A competency-based instructional system is based on the concept that no two people learn the same way at the same rate. To the students, CBVE means:

1. Being given credit for what they already know.
2. Being able to identify what they need to know or do.
3. Being able to proceed at their own rate within program guidelines.
4. Having some choice in how they learn--individually, on a one-to-one basis, in small groups, in large groups, or through audiovisual means.
5. Accepting more responsibility for their own learning.
6. Being given more responsibility in decision making and time management.

7. Evaluating their own progress accurately.
8. Being able to move more freely in the classroom and/or the shop.
9. Having a performance-based curriculum which requires demonstrating mastery learning at the level of performance designated by workers in the occupation.
10. Competing against pre-set standards and not other students; and being graded on achievement of standards or criteria for each segment of the curriculum.

For the teacher, CBVE means:

1. Being a manager of learning, a consultant rather than a "giver-of-all-information," a facilitator of the learning process.
2. Being a motivator, concentrating on instilling confidence in the learner, providing rewards for jobs well done, and on serving as a model of desirable work habits, attitudes, and competency in the occupational field.
3. Having the responsibility of advising a group of students, and being a part in designing each student's personalized program of study.
4. Being responsible and accountable, along with the student, for the curriculum.
5. The key element in the teaching-learning process.

Characteristics of a CBVE Program

A CBVE program can be identified by examining its characteristics. The following paragraphs explain the major characteristics. It should be pointed out, however, that a program probably would not have all of these characteristics, but may have modifications of them.

1. Course content is based upon actual worker's tasks which are measurable. Competencies to be learned by the students are determined in advance of instruction through a job or task analysis. The job analysis focuses upon the job duties and tasks involved in work activity. The purpose of a job analysis is to find out what workers are doing on the job.
2. Student performance objectives are specified in advance of instruction. Job competencies are expressed in terms of student performance objectives. Performance objectives focus on student outcomes or what the individual will be able to do upon successful completion of instruction. A performance objective consists of three components: (1) a student's performance or behavior stated in observable and measurable

terms; (2) a description of the conditions and limitations under which the student is expected to perform a task; and (3) a precise description of the acceptable performance standard or criterion. Students are made aware of the objectives they must achieve which eliminates guesswork for both students and teacher.

3. Student achievement is based upon demonstrated competency. Performance of skills is of prime importance in CBVE. Emphasis is placed on the development of minimal levels of competency by all or many students, thus promoting the acquisition of marketable job skills. However, opportunities should be provided for and students encouraged to develop their abilities beyond the minimal performance standard so that individual abilities can be developed to their fullest.
4. Instruction is individualized. Opportunity is provided for differences among students with respect to the objectives they pursue at a given time, the mode or methods of instruction, and the materials used for learning. Instruction can be self-paced, with the student having some choice in the selection of objectives and learning activities under the guidance of the teacher. Learning activities may involve the use of student competency sheets, learning activity packages, group projects, independent study, on-the-job training, and simulations.
5. The student and teacher are more accountable for performance of competencies. The student, as well as the teacher, can be more accountable for his or her performance in a CBVE program as compared with a traditional program. The individual knows what he or she is expected to demonstrate and must accept the responsibility, along with the teacher, for meeting the identified performance standards. In doing so, the student is encouraged to assume more responsibility for the instructional process since the completion of the program is dependent on the demonstration of specified competencies.
6. Learning is guided by feedback. Feedback plays an important part in a CBVE program. Frequent or immediate feedback is provided to the student. The student's progress is monitored closely in relation to the stated objectives in order to provide reinforcement and motivation for learning, in addition to diagnosing any student deficiencies so that remedial instruction can be provided.
7. Learning time is flexible. Time may vary among students to accomplish the objectives. Thus, slower students are permitted to take enough time, and faster ones can proceed to advanced units.
8. An open entry/open exit program is possible. The concept of an open entry/open exit program is possible in CBVE. When a student has achieved the required competencies, the individual should receive credit for the work and move on to advanced

training or the job market. Many entry and exit points throughout the training program may exist, reflecting different job and skill levels within an occupation. The concept of open entry/open exit, however, is difficult to handle administratively due to the present scheduling in today's schools.

9. Criterion-referenced measurement is employed to evaluate the attainment of the performance objectives. A criterion-referenced test (CRT) or measure is one that is constructed to yield measurements which are directly interpretable in terms of specified performance standards. A student is evaluated according to predetermined performance standards rather than by a comparison with other students. A CRT is performance-oriented; that is, it measures if an individual can perform a job task or work sample under controlled conditions. This type of performance test usually, but not always, involves the manipulation of equipment, materials, and objects. Since every student progresses as an individual, failure or pressure is minimized.
10. The teacher is a manager and facilitator of instruction. The teacher's and student's roles in a CBVE program are different than in a traditional program. The teacher is more of a manager, facilitator, and motivator in the instructional process. The teacher and student actually become more involved with the teaching-learning process.

TEST YOUR KNOWLEDGE

IDENTIFYING CHARACTERISTICS OF CBVE

Directions: Listed below are 15 statements. Eight of them accurately describe characteristics of CBVE. Place a checkmark opposite those which accurately describe CBVE. Compare your answers with the key provided at the bottom of the next page. You must identify seven correctly before proceeding to the next section.

- ___ 1. CBVE is an instructional system designed to improve vocational education.
- ___ 2. CBVE is a system in which the teacher is held most accountable for a student's performance.
- ___ 3. CBVE emphasizes testing and de-emphasizes instruction.
- ___ 4. CBVE emphasizes group instruction primarily based on lecture and demonstration activities.
- ___ 5. CBVE is a program in which the performance objectives are made known to the students in advance of instruction.
- ___ 6. CBVE emphasizes the related knowledge associated with occupational skills.
- ___ 7. CBVE holds the student accountable for achieving passing grades when compared with other students.
- ___ 8. CBVE places emphasis on exit requirements of a program or course.
- ___ 9. CBVE holds the student accountable for attaining a given level of competency.
- ___ 10. CBVE is a system which recognizes that learning occurs over a specific period of time for most students.
- ___ 11. CBVE provides for frequent and/or immediate feedback to students.
- ___ 12. CBVE holds the performance standards constant and allows time and learning methods to vary.
- ___ 13. CBVE is a system which insures that most students will be employable at the end of a specified period of time.
- ___ 14. CBVE is based on performance objectives which are derived from actual worker tasks.
- ___ 15. CBVE requires the teacher to perform differently than in a traditional instructional program.

A SELF-RATING EVALUATION

HOW COMPETENCY-BASED IS YOUR PRESENT PROGRAM OR COURSE?

1. Complete the self-rating evaluation beginning on the next page to help you decide roughly how CBVE-oriented your present course or program is. The answers "always" and "often" indicate a program is more competency-based than the answers "never" and "rarely." Be honest with yourself in rating the questions.

Key for page 7 - 1, 5, 8, 9, 11, 12, 14, and 15

A SELF-RATING EVALUATION

In your current course or program:

1. Students are evaluated and placed at a level of instruction appropriate to their present capabilities.

_____ always
_____ often
_____ sometimes
_____ rarely
_____ never

2. Students learn at their own pace.

_____ always
_____ often
_____ sometimes
_____ rarely
_____ never

3. Students are provided with, and are able to select from, a variety of learning activities and resources.

_____ always
_____ often
_____ sometimes
_____ rarely
_____ never

4. Each student learns skills to meet his/her own needs, rather than learning skills that are assigned to the whole class.

_____ always
_____ often
_____ sometimes
_____ rarely
_____ never

5. Students learn from each other.

_____ always
_____ often
_____ sometimes
_____ rarely
_____ never

6. Students fully understand prior to instruction what is expected of them.

_____ always
_____ often
_____ sometimes
_____ rarely
_____ never

7. Students can work independently and without constant teacher supervision.

_____ always
_____ often
_____ sometimes
_____ rarely
_____ never

8. Students are allowed to help plan their own learning activities.

_____ always
_____ often
_____ sometimes
_____ rarely
_____ never

9. Performance objectives are used to specify student outcomes.

_____ always
_____ often
_____ sometimes
_____ rarely
_____ never

10. The course performance objectives are based on a valid job analysis.

_____ always
_____ often
_____ sometimes
_____ rarely
_____ never

11. Students know exactly what the minimum level of performance is for an objective or activity.

_____ always
_____ often
_____ sometimes
_____ rarely
_____ never

12. Learning materials are easily accessible to students when they need them.

_____ always
_____ often
_____ sometimes
_____ rarely
_____ never

13. Personnel such as teacher aides, paraprofessionals, or advanced students are available to help students who experience learning difficulties.

_____ always
_____ often
_____ sometimes
_____ rarely
_____ never

14. Available facilities allow for both individual, small-group, and large-group instruction.

_____ always
_____ often
_____ sometimes
_____ rarely
_____ never

15. Students are evaluated according to written performance standards and not how other students are doing in the class.

_____ always
_____ often
_____ sometimes
_____ rarely
_____ never

16. Instruction is individualized.

_____ always
_____ often
_____ sometimes
_____ rarely
_____ never

17. Students have a record of what competencies they have achieved.

_____ always
_____ often
_____ sometimes
_____ rarely
_____ never

Information Section II

ADVANTAGES, MISCONCEPTIONS, AND CONCERNS OF CBVE

Advantages of CBVE

As an instructional approach to increase student learning and occupational success, CBVE has certain advantages:

1. The student knows in advance of instruction exactly what he or she must do and how well. Performance objectives are used for this purpose.
2. The use of a variety of learning activities will keep students more motivated than just the traditional textbook and lecture/discussion/demonstration approach. Students like CBVE programs better than traditional programs.
3. A modular instructional approach allows both students and teachers a greater degree of freedom and flexibility. The teacher becomes more of a manager and facilitator of learning.
4. Programs can be individually designed to accommodate student differences in learning styles, interests, and abilities. With individualized instruction, the student is given the opportunity to achieve a level of occupational competency while working at his or her own rate.
5. Programs are more accountable to taxpayers, students, and employers because they are based on specific competencies.

Misconceptions and Concerns of CBVE

Even though CBVE is certainly not the answer to all educational problems, many criticisms and doubts about CBVE are based on simple misunderstandings. The following information outlines some of the common complaints about CBVE.

1. With so much emphasis on individualized instruction, each student is isolated in the instructional process. Rather than causing isolation, CBVE presents more opportunity to interact with other students and the teacher (through one-to-one situations and small-group settings) than does the conventionally-structured classroom.
2. CBVE is dehumanizing. Instruction which is not competency-based is often more dehumanizing. When students are taught as a group in a traditional program, their individual needs as persons often cannot be met. Conventional grading systems encourage students to compete against one another, making slower students feel inadequate and falling further behind. Sometimes even the most able students are held back from achieving their full potential in group-oriented instruction.

Individualized instruction in CBVE considers each student's needs and goals, provides more time and assistance which is necessary to achieve success, and minimizes feelings of failure and frustration.

3. CBVE forces all students into the same mold. In a sense, everyone in a CBVE program becomes alike in that all students are required to achieve the same minimum competencies. But these competencies are the very ones workers say are required for success on the job. Beyond these basic and minimal skills and abilities, however, students may choose to specialize, develop particular job skills further, and study some topics in greater depth. Thus, once students advance beyond the entry-level requirements, they may choose where they want to go from there.
4. CBVE lowers standards because it allows too many people to get A's. Grades do tend to be higher in CBVE programs when compared to traditional programs. However, this is mainly because CBVE lets students know where they are going, thus improving their motivation and achievement. Many teachers maintain that standards are raised, not lowered. Objectives are specified in terms of performance and students are evaluated according to specific criteria. Furthermore, CBVE is more consistent with the sound philosophy of education that all students achieve according to their highest potential given the correct conditions.
5. You give away what will be on the test when you let students know the exact evaluative procedures and items in advance. You are just teaching the test. In CBVE, you do not teach in preparation for the test but for the skills the test will require. One principle of CBVE is that testing should not be a psychological game in which the students try to outguess the teacher. A student who knows exactly how to perform for success is more likely to learn and perform efficiently. Criterion-referenced measures encourage the teacher to pinpoint the essential learnings toward which to direct instruction. From the student's point of view, less time is wasted studying nonessential information. The student can evaluate personal progress toward the standards.
6. CBVE will not work in all program areas of vocational education. For some courses, to specify precisely student outcomes and to direct instruction toward the desired student performances is more difficult than others. Any course worth teaching, however, is also worth the effort to measure its success. To measure student learning, precise performances and standards of quality are needed. All vocational programs should have measurable competencies. Fortunately for vocational educators, most vocational-technical courses can be converted to competency-based instruction. V-TECS catalogs and other resource material go a long way toward helping to establish CBVE programs by eliminating a tremendous amount of groundwork which would otherwise have to be done by teachers.

7. CBVE calls for individualized instruction. One teacher cannot provide adequate supervision for students working on diverse learning tasks in a variety of locations, sometimes using dangerous equipment or materials. Wherever individualized programs have been tried, most students have adapted very quickly to a more independent learning style. There are many techniques to assist the teacher to individualized instruction. The more advanced and the more responsible students can assist the teacher by tutoring and supervising other students as they work independently or in small groups. In some situations, paraprofessionals or teacher aides may be employed to aid with supervision and recordkeeping. It should be pointed out, however, that CBVE programs will not be totally individualized. There will still be large-group and small-group activities in the classroom.
8. Teachers need completely new skills to teach using CBVE. Although some new teacher roles and skills may be required, teachers currently have most of the skills necessary to adopt the approach. All that is needed is time and training for the teachers to be comfortable with using CBVE. The proper attitude of the teacher is very important to make CBVE work.
9. CBVE is too academic and places too much emphasis on reading. Historically, reading has been a problem in education, especially with vocational education students. What better way for a person to improve their reading skills than through vocational education. Instructional materials should be at the appropriate reading level so as to make students want to read. Although non-reading methods of teaching can be employed in a CBVE program, it is better to assist students in the development of reading skills.
10. CBVE seems like a lot of paperwork for the teacher and students. Depending on what instructional materials a teacher uses, paperwork may be increased or decreased. However, CBVE will organize instruction so much better that it is worth the effort. Students themselves can help in the control of paperwork if the instructional program is well designed. Since student outcomes and learning activities are written, there is no confusion on what and how a student is to learn.
11. CBVE is just another name for minimal competency testing. Although testing is an important element of a CBVE program, the end result is not just being able to pass a test. The instructional process and being taught how to learn is just as important, if not more important, as showing that one possesses the skills, attitudes or knowledges of a work activity. CBVE is not just a series of tests, but a total instructional system.

12. CBVE is just another fad. Elements of CBVE have been around a long time. However, they have never been really implemented in the classroom. Job analysis, performance objectives, student competency sheets, individualized instruction, and other elements of a CBVE program will be around a long time to come. CBVE is not a revolutionary fad, but the results of good educational practices which have evolved throughout the years.
13. The teacher is eliminated from the teaching-learning process. The teacher is the key to any instructional process. CBVE does not eliminate the teacher, but his or her role is changed. As has been said, the teacher is more of a facilitator, motivator, and manager of instruction in CBVE. Actually, the teacher is more involved with student learning in a CBVE program.

TEST YOUR KNOWLEDGE

SOLVING PROBLEMS WITH CBVE

Directions: Below are problems encountered in many vocational programs. Beside each problem, write why CBVE could improve the situation. Check your responses with the model answers given at the bottom of this page.

PROBLEM	CBVE SOLUTION
1. The bright student becomes bored in a group situation and cannot move ahead.	
2. The teacher and students become "locked in" a learning situation. No flexibility is allowed in the program.	
3. The student has to guess how to perform in order to make a passing grade.	
4. The student becomes tired of simply reading in a textbook or listening to the teacher.	
5. The student must stay in the class the entire school year, even though he or she could finish the course requirements in seven months.	

POST-TEST ACTIVITY:

You have been assigned the task of explaining, and selling, C.B.V.E. to the Joint Operating Committee. In your presentation, give a rationale and justification for C.B.V.E, list the characteristics of the program and list what changes will need to be made in facilities, equipment, supplies, and classroom management to allow for C.B.V.E. instruction. Also include any inservice needs. Attach additional sheets as necessary.

COMPETENCY-BASED VOCATIONAL EDUCATION

GLOSSARY

AFFECTIVE DOMAIN: Learning which involves the interests, attitudes, values, and emotions of the learner; the "feelings" a person has.

ARTICULATION: The relationship of an instructional program to similar or related programs at another level.

CAREER LADDER: A graphic description of the sequence of jobs making up a particular occupation, beginning at the bottom with the job requiring the least amount of experience and training and proceeding up the ladder to the job requiring the greatest number of skills and the highest degree of responsibility. (Also called career lattice or job ladder.)

CHECKLIST: A list of activities or behaviors that are checked by a teacher or observer as being done during a particular observation session; frequently used to assess student performance in the psychomotor and affective domains of learning.

COGNITIVE DOMAIN: Learning which involves recall, recognition, and development of intellectual skills and abilities; the information a person "knows."

COMPETENCY: The ability (including knowledges, skills, and/or attitudes) to perform a specific task successfully to meet a specified standard. (Also called a skill or task.)

COMPETENCY-BASED VOCATIONAL EDUCATION (CBVE): Occupational training programs in which required knowledges, skills, and/or attitudes (competencies) are specified before instruction takes place. A CBVE program has the following characteristics: 1) student performance objectives, which are based on a job analysis, are specified and made known to students; 2) instructional methodology is geared to the individual student; 3) learning time is flexible; and, 4) student evaluation is based on the performance standards needed on the job. (Also called competency-based instruction, performance-based education/instruction, criterion-referenced instruction, mastery learning, or proficiency-based education.)

COMPETENCY PROFILE: A record-keeping form to keep track of a student's competencies in a specific occupational area.

COMPETENCY STATEMENT: An action verb and a noun that describe a job task (i.e., type a business letter).

CONSTRUCTED-RESPONSE TEST ITEMS: Items which require a student to construct a response to a question, such as a short answer, a definition, and essay question; items usually used to assess students in the cognitive domain. (Also called supply test items or free-response test items.)

COURSE: A defined segment of a program which includes specified number of credit hours.

COURSE OF STUDY: A comprehensive plan which shows the scope and sequence of content, and the organization and management of instructional activities for a specific course in the curriculum. (Also called course outline, course syllabus, or course synopsis.)

COURSE OUTLINE: A topical listing of the content of a specific course.

CRITERION (Criteria): A performance standard or a specified statement on which a judgment or decision may be based. (Also called standard or performance level.)

CRITERION-REFERENCED TEST (CRT): A test constructed to yield measurements that are directly interpretable in terms of specified performance standards. An individual's performance is compared to a criterion; the criterion being the work or performance standard. Thus, the score on a CRT is based on absolute standards, such as job competency, rather than relative standards, such as class standing. (Also called a criterion-referenced measure, criterion-referenced evaluation, objective-referenced test, proficiency test, or a domain-referenced test.)

CURRICULUM: All the objectives, content, and learning activities arranged in a learning sequence for a particular instructional area. An orderly arrangement of integrated subjects, activities, and experiences which students pursue for the attainment of a specific educational goal.

DICTIONARY OF OCCUPATIONAL TITLES (DOT): A publication prepared by the Bureau of Employment Security, U. S. Department of Labor, that contains descriptions of specific job titles.

DOT CODE: A nine-digit number identifying a specific occupation taken from the Dictionary of Occupational Titles.

DUTY: A distinct grouping of tasks which are related to each other by the nature of the work to be performed (i.e., Job-Duty-Task-Step).

ENABLING PERFORMANCE OBJECTIVE: A statement of the knowledges, skills, and/or attitudes which the learner must have if he/she is to reach a particular terminal performance objective. Enabling performance objectives, which are necessary for a student to attain before the terminal performance objective(s) can be reached, are contained within or identified with the same task as the terminal performance objective(s). (Also called subordinate objective, intermediate objective, or interim objective.)

ENTRY-LEVEL SKILLS: The set of competencies required of a beginning worker in an occupation for immediate productivity upon entering that occupation.

EVALUATION: A judgment of the worth or quality of an individual's performance; judgment of a student's knowledges, skills, and/or attitudes. (Also called assessment.)

EVALUATION STRATEGIES: Methods of determining the success of an instructional process, including the necessary planning to insure the accurate appraisal of a learner's achievement in relation to performance objectives.

GOAL: A statement of broad general direction or intent.

INDIVIDUALIZED INSTRUCTION: Learner-centered instruction in which the materials and activities are tailored to meet the needs of the individual student; includes individual placement and selection of goals, self-pacing, individual monitoring of progress, and adaptation to individual learning style. (Also called individualized learning, individually-prescribed learning, or personalized instruction.)

INTERVIEW METHOD: A job analysis method in which employees are interviewed to gather information about their jobs.

JOB: The composite of duties and tasks performed regularly in one's trade, occupation, or profession (i.e., Job-Duty-Task-Step).

JOB ANALYSIS: The method used to gather information about a job, involving observations, interviews, and questionnaires. The goal is the development of a detailed description of the qualifications necessary for a specific job, conditions for performance, and the duties and tasks involved. (Also called task analysis or occupational analysis.)

JOB INVENTORY: A survey instrument containing a listing of possible tasks to be performed in a particular occupational area, grouped under duty classifications. (Also called task inventory or occupational inventory.)

JOB TITLE - The common name by which a position is identified.

LEARNING ACTIVITIES: Educational exercises completed by the students to learn specific competencies. (Also called learning strategies.)

LEARNING ACTIVITY PACKAGES: Individual self-contained packets of information to facilitate learning. Each LAP contains a pre-test, student performance objectives, learning activities, self-checks, and a post-test. (Also called learning packages, learning modules, or learning packets.)

LEARNING RESOURCES: Learning materials, methods, and people used to assist people in learning.

LESSON PLAN: A detailed teaching breakdown of the important points of a lesson arranged in the order in which they are to be presented. A lesson plan is a step-by-step analysis of how one intends to teach a lesson.

MASTERY: A specified level of performance; meeting all of the specified minimum requirements for completion of a task or competency.

MEASUREMENT: A systematic, objective procedure concerned with developing quantitative descriptions of a student's performance or behavior.

MODULE: A unit of instruction; a package of learning materials designed to allow a student to achieve a competency or set of competencies; a learning activity package.

NORM-REFERENCED TEST: A test in which the student's score is compared to the performance of other students taking the test.

OBSERVATION METHOD: A job analysis method in which employees are observed performing their jobs.

OCCUPATIONAL CLUSTER: A group or listing of occupations within a vocational area that share common experiences, knowledge, and skill requirements, such as manufacturing occupations, construction occupations, etc.

OPEN-ENTRY/OPEN-EXIT: A scheduling approach that allows students to enter, leave, and re-enter a vocational program at any time. Completion of a program of study is possible whenever the student is able to demonstrate competency on selected objectives.

PERFORMANCE OBJECTIVE: A statement of exactly what the learner must do, indicating an activity that can be observed and measured. A performance objective contains: (1) the conditions, which describe the situation, limits, tools, and equipment; (2) a behavior, which states exactly what observable behavior the learner must demonstrate; and (3) a standard, which describes how much is required or how precise the quality of work must be. Thus, a performance objective answers the questions: Given what? Does what? How well? (Also called behavioral objective, terminal objective, or criterion objective.)

PERFORMANCE TEST: A type of measuring device in which a skill or task is specified and the students are required to actually perform the task using materials and equipment.

POST-TEST: A test administered after a student has proceeded through the instruction related to a performance objective in order to determine whether the student has mastered the objective. In an individualized system, post-tests are used to determine whether the student should move on to another objective or receive further instruction on that same objective.

PREREQUISITE: Anything that is required before something else can take place. Generally used to refer either to specific skills, abilities, or other requirements needed before an occupational position can be attained or to knowledges and skills required before a specific objective can be mastered.

PRE-TEST: A test administered before a student begins a new sequence of instruction to determine what the student already knows or is capable of doing. In an individualized system, pre-tests are used to determine which objectives the student does not need instruction in.

PROCESS EVALUATION: An appraisal process designed to determine if a student is progressing satisfactorily; a student's performance on procedures or steps. (Also called formative evaluation, input evaluation, or dynamic evaluation.)

PRODUCT EVALUATION: An appraisal process designed to determine the degree of accomplishment or achievement on the part of the student in relation to the performance objectives; rating the final product of a student's performance. (Also called summative evaluation.)

PROGRAM: A planned sequence of courses, services, or other educational activities designed to meet specific vocational objective(s) so that individuals are prepared to enter an occupation or closely related groups of occupations.

PROGRAMMED INSTRUCTION: An instructional strategy which presents information in planned steps. Instruction can be programmed in such media as printed texts, tapes, films, filmstrips, slides, and scripts for live presentation. Programmed instruction can either be branched or linear.

PSYCHOMOTOR DOMAIN: Learning which involves manipulative or motor skills; the physical activities a person does in performing a skill.

QUESTIONNAIRE METHOD: A job analysis method in which employees complete a questionnaire or a job inventory survey instrument.

RATING SCALE: A measurement instrument used to assess the quality of work that a student has done; can be used to rate the final product in the psychomotor domain and student work habits in the affective domain.

RECOGNITION TEST ITEMS: Items which require a student to recognize or select a correct answer from a series of choices, such as multiple-choice and matching items. (Also called selection test item.)

SCOPE: The amount of instructional material to be taught. The depth and breadth of the tasks and instructional content to be taught in a particular course.

SEQUENCING: The process of arranging instructional content in a logical order to enable efficient and effective learning.

SKILL: A manipulative action performed while producing a finished product or performing a task. (Also called operation, task, or competency.)

STANDARD: That part of a performance objective or of a criterion-referenced measure which describes how well or to what proficiency level a task must be performed. (Also called performance level, criterion, or work standard.)

STEP: The smallest aspect of a skill; a very specific level in the hierarchy of a job (i.e., Job-Duty-Task-Step); simpler abilities needed to do a more complex task. (Also called sub-task or subordinate skill.)

STUDENT COMPETENCY SHEET: An instructional management tool used by the student which lists the instructional unit, competency or task, performance objective, learning activities, evaluation, and extended activities the student will complete to master a competency.

STUDENT CONTRACT: A formal, written agreement between the instructor and student that specifies the relationship between the course content and grading procedure.

SYSTEMS APPROACH: A logical and integrated combination of resources (students, instructors, materials, equipment, and facilities), techniques, and procedures designed to achieve a specified purpose.

TASK: A discrete unit of work performed by an individual in the completion of an assigned job duty (i.e., Job-Duty-Task-Step). (Also called skill, operation, or competency.)

TASK DETAILING: A listing of the steps involved in performing a job task in terms of what is done; the procedures to follow in completing a job task. (Also called task description.)

TEACHING STRATEGIES: Methods of directing and conducting the teaching-learning process of instruction in a given situation.

TERMINAL PERFORMANCE OBJECTIVE: A student outcome that identifies what the student will be able to know or do after successfully completing the unit objective. One may have to achieve several enabling objectives before being able to perform the terminal objective.

UNIT OF INSTRUCTION: A major grouping of instructional content arranged because of its similar nature or for ease of instruction or learning.

VOCATIONAL-TECHNICAL EDUCATION CONSORTIUM OF STATES (V-TECS): A group of states and agencies formed to develop catalogs of performance objectives in occupational education. V-TECS employs a uniform procedure for developing objectives based on a job analysis technique. Members develop catalogs and receive catalogs developed by other members. V-TECS is an operating unit of the Commission on Occupational Education Institutions, Southern Association of Colleges and Schools.



BERKS VOCATIONAL-TECHNICAL SCHOOL

AN EQUAL OPPORTUNITY EMPLOYER

2900 St. Lawrence Avenue
Antietam Valley Center
Reading, PA 19606
(215) 779-7111

MEMORANDUM

TO: All Instructors
FROM: Doris M. Epler *DME*
RE: C.B.V.E. Seminar
DATE: March 18, 1981

The C.B.V.E. Articulation team which consists of Reading-Muhlenberg, Schuylkill County and Berks Vo-Tech, will be conducting a C.B.V.E. Seminar. This workshop will consist of five (5) evenings (4:00 P.M. - 7:00 P.M.) of on-site sessions and five (5) off-site assignments.

The objective of this effort is to reinforce staff awareness and understanding of the C.B.V.E. concept so that we may better operationalize our individualized learning approach.

Each staff member who participates will be paid a stipend of \$250.00 for the completion of ALL activities. Sandwiches and coffee will be provided during the 1/2 hour break time. These sessions will be conducted at Reading-Muhlenberg on the following dates:

Tuesday, April 28, 1981
Thursday, April 30, 1981
Tuesday, May 5, 1981
Thursday, May 7, 1981
Tuesday, May 12, 1981

Due to budget restrictions, attendance at this workshop will be limited, therefore, applications will be accepted on the following priority basis.

- (1) Members of the groups to be started in September 1981 which are: Cosmetology, Health, Printing, Electronics, DOE.
- (2) Members of this year's articulation group which are: Auto Body, Auto Mechanics, Food Prep., Horticulture, Machine Shop, Data Processing.
- (3) All other instructional staff.

Please fill out the attached application and forward to the Curriculum Office immediately indicating your decision to participate or not. ALL applications must be returned so that we are sure no one was overlooked. ALL applications will be reviewed and applicants will be notified within two (2) weeks regarding their status.

DME/gd

Attachment



BERKS VOCATIONAL-TECHNICAL SCHOOL

AN EQUAL OPPORTUNITY EMPLOYER

2900 St. Lawrence Avenue
Antietam Valley Center
Reading, PA 19608
(215) 779-7111

C. B. V. E. SEMINAR

PLACE: Reading-Muhlenberg Vo-Tech School

DATES: Tuesday, April 28, 1981
Thursday, April 30, 1981
Tuesday, May 5, 1981
Thursday, May 7, 1981
Tuesday, May 12, 1981

TIME: 4:00 P.M. to 7:00 P.M.

LUNCH: Will be provided

NAME _____

SHOP _____

CENTER _____

☐ Yes, I am interested in attending the C.B.V.E. Seminar. For completion of all activities, I understand that I will be paid a stipend of \$250.00. Furthermore, I understand that acceptance in this workshop will be on a priority basis but I will be notified within two (2) weeks of my status regarding my application.

☐ No, I am not interested in participating in the C.B.V.E. Seminar at this time.

(APPENDIX F)

C. B. V. E. SEMINAR

_____ BERKS VOCATIONAL-TECHNICAL SCHOOL

_____ READING MUHLENBERG VOCATIONAL SCHOOL

_____ SCHUYLKILL COUNTY AREA VOCATIONAL-TECHNICAL SCHOOL

NAME: _____

	Change Agent	Task Analysis	Performance Objectives	Writing Modules	Management Systems Facility
1. How many on-site sessions did you attend?	1	2	3	4	5
2. How many off-site assignments did you complete?	1	2	3	4	5
3. Which on-site session was the most beneficial to you? Why? (Please explain)	1	2	3	4	5
4. Which on-site session was the least beneficial to you. Why? (Please explain)	1	2	3	4	5

5. What topics should have been covered in this seminar which were not?

6. Please feel free to make general comments:

THANK YOU FOR YOUR PARTICIPATION!

(APPENDIX G)

PROJECT DIRECTOR _____
 SCHOOL _____

COMPETENCY-BASED VOCATIONAL EDUCATION
 PROGRESS CHART

FROM _____
 TO _____

ACTIVITY CODE IN PROGRESS ✓ COMPLETED (Date) N/A = NOT APPLICABLE	COURSE / INSTRUCTOR																									COMMENTS
DUTIES / TASKS																										
A. DEFINE SCOPE OF COURSE																										
1 Major occupations are defined by D.O.T. code and title in which the greatest number of recent graduates have been employed during the past three years.																										
2 Employment opportunities for defined occupations are projected for 3-5 years from labor market data and craft committee feedback.																										
3 Anticipated technological changes in defined occupations are determined from industry and craft committee feedback.																										
4 Course description written for assigned VEMIS title based upon D.O.T. occupations and verified by craft committee.																										
B. VALIDATE OCCUPATIONAL COMPETENCIES																										
1 V.T.E.C.S. task lists were reviewed by instructor to identify tasks for defined occupations.																										
2 Other task lists reviewed by instructor to identify additional tasks for defined occupations.																										
3 Task lists created for defined occupations where none are currently available.																										
4 Occupational tasks for defined occupations approved and documented by craft committee based upon industry needs.																										
C. IDENTIFY VALID TERMINAL PERFORMANCE OBJECTIVE FOR EACH TASK																										
1 Performance objectives from appropriate V.T.E.C.S. catalogs identified and reviewed.																										
2 Performance objectives from other sources identified and reviewed.																										
3 Performance objectives written for tasks where none are currently available.																										
4 Performance objective content reviewed with craft committee to determine validity of conditions and standards.																										

(Appendix H)

S T E P

STAFF TRAINING EDUCATIONAL PLAN

OBJECTIVE: To provide the necessary in-service activities to assist staff members to plan, develop, implement, manage, and evaluate competency-based vocational education. (CBVE).



BERKS VOCATIONAL TECHNICAL SCHOOL
2900 St. Lawrence Avenue
Reading, PA 19606
(215) 779-7111
Doris M. Epler, Curriculum Supervisor

EAST CENTER: R. D. # 1
Oley, PA 19545
(215) 987-6201

WEST CENTER: R. D. # 1
Leesport, PA 19533
(215) 374-4073

PREFACE:

"Be it resolved that the Joint Operating Committee of Berks Vocational-Technical School is aware of the importance of competency-based education in establishing programs which are responsive to the individual needs of the students, while at the same time, addressing the ever-changing needs of the community which our educational institution serves. We encourage the planning, developing and implementing of competency-based curriculum in a systematic manner so that our educational programs will be highly accountable to all participants."

Berks Vocational-Technical School
Joint Operating Committee, February, 1979

"It must be acknowledged that there is abroad in all civilized countries a growing conviction that vocational education should be better organized and more efficient. If this conviction is well founded, it rests upon one or both of two conditions: Either the older agencies - the home, the shop, and other forms of participation in productive industry - have lost their efficiency; or else the demands of modern life are changing, and imposing requirements which can be no longer met by these agencies. An analysis of the various types of productive effort will show that in some cases one, and in some the other, condition prevails; while in not a few instances, the contemporary situation is the result, on the one hand, of the decay, in old institutions, of vocational teaching, accompanied by a corresponding increase in the complexity and more scientific character of the industries themselves."

THE PROBLEM OF VOCATIONAL EDUCATION

David Snedden, Ph.D.
Commissioner of Educ, Mass., 1910



BERKS VOCATIONAL-TECHNICAL SCHOOL

S T E P

We are now in our second year of providing in-service activities designed to assist staff members in the development of skills necessary to plan, develop, implement, manage and evaluate competency-based vocational education (CBVE).

As we move through the various activities towards this professional development effort, we must be accountable for the progress of each individual. Therefore, we have developed the concept of STEP or Staff Training Educational Plan.

Activities will be planned to provide each individual with services to gather data, materials, and general information which will aid in the documentation of our involvement in CBVE. This will provide us with the necessary accountability for CBVE, and will, at the same time, provide us with a great deal of documentation which will be required when we go through State evaluation which is tentatively scheduled for February, 1982.

The activities will be based on the tasks identified by the Research Coordinating Unit of the Bureau of Vocational Education for the Commonwealth of Pennsylvania as those duties necessary for staff members to fully understand and implement curriculum which is competency-based.

EVERYONE will have to provide documentation on their progress towards meeting our CBVE goals. As you complete the various activities included in STEP, please forward them to the Curriculum Department where they will be placed in your individual file in preparation for the evaluation of CBVE and the State evaluation. RELEASE TIME WILL BE PROVIDED WHENEVER POSSIBLE BUT SOME OF THESE ACTIVITIES WILL HAVE TO BE COMPLETED WITH YOUR CRAFT COMMITTEE!

BERKS VOCATIONAL-TECHNICAL SCHOOL

S T E P

SECTION A: Define the scope of the course.

- A-1. Major occupations are defined by DOT number and title in which the greatest number of recent graduates have been employed during the past three years.

ACTIVITIES:

- _____ 1. Complete the module entitled "UNLOCKING THE DOT" found in the task response section and numbered A-1-1.
- _____ 2. Using the Dictionary of Occupational Titles, your scope of the course and form # A-1-2, identify the DOT code numbers and titles which reflect the opportunities for students who would take your course. List as many as you feel would be appropriate.
- _____ 3. Then, using the employment data provided by the Guidance Dept., D.O.E., or your own placement records, determine the 3 to 6 top titles where placement is occurring and place the percentage figures in column 3 on the same form.
-

- A-2. Employment opportunities for defined occupations are projected for 3-5 years from labor market data and craft committee feedback.

ACTIVITIES:

- _____ 1. Using the labor market information found in Appendix A or specific occupational studies done in your field, identify the opportunities within your occupational hierarchy projecting for 3-5 years. Use form A-2-1 for this activity which will be found in the task response section.
- _____ 2. If you, or your craft committee, have conducted a survey in the past three years, include this data in the information provided above.
- _____ 3. Get craft committee feedback for verification purposes. This may be accomplished during a regular craft meeting, or via a phone survey, or you may include the form along with a letter of explanation in the next mailing to your committee. Each member will need a copy of form A-2-3 for their responses. This form will be found in the task response section.
-

- A-3. Anticipated technological changes in defined occupations are determined from industry and craft committee feedback.

- _____ 1. Provide documentation which will identify what technological changes the members of your craft committee feel will effect your educational program. A copy of craft committee meeting minutes with these items underlined in red will be acceptable. Responses to A-2-3 will also assist you in this activity.

-
2. Provide copies of any industrial or trade reports which identify such changes taking place in your field. Include the proper citations for these articles.
-

A-4. Course descriptions written for assigned VEMIS title based upon occupations and verified by craft committee.

-
1. Identify the proper VEMIS code for your course using Appendix B.
 2. Write a course description based on the primary DOT's determined in activity A-1, 3. Refer to The Occupational Outlook or A-5 Course Philosophy written for assigned VEMIS title. Refer to Appendix C for samples.
 3. Have this validated by your craft committee using form A-2-4.
-

-
1. After reading the Philosophy for BVTs, Appendix D, re-write the philosophy for your course using Form A-5-1.
 2. After reading about your occupation in The Occupational Outlook and the materials in Appendix E, write a description of the characteristics of the workers and the environmental factors of the workplace for your occupational area. Use Form A-5-2 for this activity.

SECTION B: Validate occupational competencies.

B-1. V-TECS task lists were reviewed by instructor to identify task for defined occupations.

ACTIVITIES:

- _____ 1. Review Appendix F and determine the status of your course in relationship to the duty/task lists as developed by V-TECS. If none exists, check these first three (3) items as "NA" and proceed to the activities for B-2.
- _____ 2. Obtain a V-TECS duty-task list.
- _____ 3. Review the duty-task list and identify those tasks which you feel should be included in your area, those whose wording you would change, and those which you would delete. Then add those competencies which are not on the V-TECS list but which you feel should be included.

.....
B-2. Other task lists were reviewed by the instructor to identify tasks for defined occupations. If none exist, go to B-3.

- _____ 1. Review task lists such as PDE, 916, Kentucky, Mid-America, Oklahoma, Florida, Admiral Perry, etc. or any other lists you may have for your occupational area.
- _____ 2. Identify those tasks which you feel should be included in your area, those whose wording you would change, and those which you would delete. Then add those competencies which are not on these lists, but which you feel should be included.
- _____ 3. Synthesize these lists with V-TECS and create a new list of tasks for your occupational area. Arrange these tasks on Form # B-2-3 vertically. Then, using the selected DOT's from form #A-1-2, place the DOT title and number across the top. This is the creation of your occupational matrix.

.....
B-3. Task lists created for defined occupations where none are currently available.

NOTE: If you were able to complete B-1 and/or B-2, mark "NA" in these activities and proceed to B-4.

- _____ 1. Using your own resources, create a task list which you feel encompasses your occupational area. Using Form #B-2-3, arrange these tasks vertically. Then, using the selected DOT's from form #A-1-2, place the DOT title and number across the top. This is the creation of your occupational matrix.

- B-4. Occupational tasks for defined occupations are approved and documented by craft committee based upon industry needs.

ACTIVITIES:

- _____ 1. Using the matrix you created in B-2 or B-3, get these forms typed and have a sufficient number of copies reproduced so each member of your craft advisory committee will have a copy.
- _____ 2. OPTIONAL ACTIVITY: We have an excellent slide/tape presentation which you may find helpful to show to your craft committee at one of your meetings which will explain what CBVE is and why it is so important. Please contact the Curriculum Office to schedule this excellent audio-visual presentation.
- _____ 3. If you chose not to perform the activity in B-4-2, please submit a copy of your craft advisory committee meeting minutes which indicate that you explained the CBVE concept to the members.
- _____ 4. After your members understand the CBVE concept and they each have their own copy of the occupational matrix, ask them to review them and place a check mark ✓ in each box where they feel that it is necessary for the identified DOT title. See Appendix G for a sample of this activity.
- _____ 5. When all members have completed the above activity, they will be requested to meet and determine the final task listing. Be sure to have the final approved task listing typed and provide copies for all members as well as the Curriculum Dept.
- _____ 6. Using form B-4-6, have each member sign this Craft Advisory Task Approval Sheet. This will provide us with the approved documentation which we need to meet our CBVE requirements.

SECTION C: Identify valid terminal performance objective for each task.

C-1. Performance objectives from appropriate V-TECS catalog(s) identified and reviewed.

ACTIVITIES:

- _____ 1. Read the information regarding performance objectives found in Appendix H.
- _____ 2. If further assistance is needed, refer to "Preparing Instructional Objectives" by Robert J. Mager. If you do not have your personal copy of this book, contact the Curriculum Office and you may borrow the shelf copy.
- _____ 3. Complete the learning activity on analyzing performance objectives found in the task response section and numbered C-1-3.
- _____ 4. If you determined in B-1 that a V-TECS catalog exists for your area, and you do not have a copy, use the request form found in Appendix I and forward the request to the Curriculum Department. If you already have a V-TECS catalog, mark this activity "NA" and go to the next activity. If no V-TECS catalog exists for your area, mark all activities remaining in C-1 "NA" and go to C-2.
- _____ 5. Correlate as many V-TECS performance objectives with you approved task list as possible.

.....
C-2. Performance objectives from other sources identified and reviewed.

- _____ 1. Review any other performance objectives you may have for your course area.
- _____ 2. Correlate as many of these performance objectives with your approved task list as possible.
- _____ 3. Examine each performance objective and re-write these performance objectives to meet specifications. Cut and paste as much as possible in order to eliminate unnecessary writing. Use form C-2-3. Additional copies will be available.

.....
C-3. Performance objectives written for tasks where none are currently available.

- _____ 1. Write performance objectives for each task which did not have a supportive performance objective. Use form # C-2-3.

- _____
2. Send the completed lists of tasks and performance objectives to the Curriculum Department where they will be typed and duplicated for members of your Craft Advisory Committee.
-

C-4. Performance objective content reviewed with Craft Advisory Committee to determine validity of conditions and standards.

- _____
1. Distribute the list of tasks and performance objectives to your Craft Advisory Committee members. Encourage them to respond directly onto the lists you provided. You may use the same procedures as outlined in A-2-3.

 2. After all lists are returned, a final determination must be made regarding the wording of each performance objective.

 3. Submit the corrected list to the Curriculum Department for final typing.

 4. Secure required signatures from Craft Advisory Committee using Form # C-4-4.

"UNLOCKING THE D.O.T."

Based on the Dictionary of Occupational Titles,

Fourth Edition (1977).

OBJECTIVE: To build the necessary skills which will enable the vocational-technical teacher to use the D.O.T. to develop competency-based curriculum.

BERKS VOCATIONAL-TECHNICAL SCHOOL
Curriculum Department
Doris M. Epler

UNLOCKING THE D.O.T.

The D.O.T. can serve many useful purposes for the vocational-technical teacher providing the teacher has the "key" to unlock its contents. This exercise was designed to assist the teacher in developing the necessary competencies to create the "key" to be used for the unlocking procedure.

There are six basic parts to an occupational definition. They present data about a job in a systematic fashion. The parts are listed below in the order in which they appear in every definition:

- (1) The Occupational Code Number
- (2) The Occupational Title
- (3) The Industry Designation
- (4) Alternate Titles (if any)
- (5) The Body of the Definition
 - (a) Lead Statement
 - (b) Task element statements
 - (c) "May" items
- (6) Undefined Related Titles (if any)

A typical D.O.T. definition (with each of the six parts labeled) will be found on page XVI of the fourth edition of the D.O.T. Please turn to that page.

We will examine each of the six parts and reinforce the theory with some exercises.

(1) The Occupational Code Number

In the D.O.T. occupational classification system, each set of three digits in the 9-digit code number has a specific purpose or meaning. Together, they provide a unique code for a particular occupation which differentiates it from all others.

Digit 1 = All occupations are clustered into one of nine broad "categories".
(these are listed on pages XVI and XVII)

Digit 2 = The second digit refers to a division within the category.
(these are listed on pages XXXIV and XXXV)

Digit 3 = This digit represents the occupational group within the division.
(these are listed on pages XXXVI thru page XII)

Using these pages only, respond to the following questions:

Find page XVII. . . What digit indicates Miscellaneous Occupations? _____

Find page XXXV. . . What digit indicates motor freight occupations? _____

Find page XII. What digit indicates dump-truck drivers? _____

So therefore, the first three digits for a
dump-truck driver would be _____

Digits 4, 5, and 6 are the worker functions ratings of the tasks performed in the occupation. Every job requires a worker to function to some degree in relation to data, people, and things. A separate digit expresses the worker's relationship to each of these three groups:

Turn to page XVIII

In the example on page one of this exercise we determined that the first three codes to define a dump-truck driver was 902. If the next three digits were 683, what does each digit tell us about the dump-truck driver's relationship to data, people, and things?

The 6 would indicate _____

The 8 would indicate _____

The 3 would indicate _____

For a further explanation of the terms under Data, People and Things, please refer to Page 1269. What types of functions does the dump-truck driver perform which relate to these codes? List several.

The last three digits of the occupational code number indicate the alphabetical order of title within 6-digit groups. They serve to differentiate a particular occupation from all others. A number of occupations may have the same first 6 digits, but no two can have the same nine digits. If a 6-digit code is applicable to only one occupational title, the final three digits assigned are always 010. If there is more than one occupation with the same first six digits, the final three digits are usually assigned in alphabetical order of titles in multiples of four (010-014-018-022 etc.)

Let's check the example of our dump-truck driver 902.683.010. Since the last three digits are 010, this indicates that there is only one occupational code number for the dump-truck driver who has the responsibilities under that code. Turn to page 877.

You will find in bold type the number 902 for dump-truck drivers. Under this you will find 902.683.010 Dump-truck driver (any ind.)

If there was another occupation to be listed for dump-truck driver the last three digits would be

(2) The Occupational Title

Immediately following the occupational code in every definition is the occupational base title. The base title is always in upper-case boldface letters. It is the most common type of title found in the DOT, and is the title by which the occupation is known in the majority of establishments in which it was found. Some titles are classified as master title. These titles are designed to eliminate unnecessary repetition of tasks common to a large number of occupations. Master titles define the common job tasks having a wide variety of job variables and a wide variety of titles.

An example is the title "Supervisor (any ind.)" Each individual supervisory occupation has its own separate definition in the DOT describing its unique duties, but at the end of the definition the reader is referred back to the master definition. By referring to this master definition, the user will learn about the typical supervisory duties which any individual supervisor also performs. (see pages 1 and 2 for Master title and definitions)

Turn to page 229. Examine 317.684-018. What is the occupation title?

(3) Industry Designation

The industry designation is in parentheses immediately following the occupational base title. It often differentiates between two or more occupations with identical titles but different duties. Because of this, it is an integral and inseparable part of any occupational title.

What is the industry designation for 317.684-018? _____

What does the 317 mean? _____

What does 684 indicate about data, people and things? _____

What does the 018 indicate? _____

(4) Alternate Titles

An alternate title is a synonym for the base title. It is not as commonly used as the base title. Alternate titles are shown in lower-case boldface letters immediately after the base title and its industrial designation.

What is the alternate title for 317.684-018 on page 229?

- (1) Worker action...what the worker actually does, expressed by action verbs in the present tense.
- (2) Machines, Tools, Equipment and/or work aids...devices used by workers to assist them in performing their jobs.
- (3) Purpose of Worker actions...what gets done.
- (4) Materials, products, subject matter and/or services...what worker uses and/or produces.

The first sentence following the industry designation and alternate titles (if any) is the lead statement. It is followed by a colon (:). The lead statement summarizes the entire occupation. It offers essential information such as itemized above.

What is the lead statement for 317.684-018? _____

Identify the following:

Worker actions (verbs)

What machines, tools, equipment or work aides will be used by this worker?

What are the purposes of the workers action? (what gets done)

What are the "may" actions of this title?

If we were to add another occupational code for a sandwich maker the code would be 317.684- _____.

Please read the material on page XXI for additional information regarding the other elements designed to assist the user of the DOT. Among these are: ITALICIZED WORDS, BRACKETED TITLES: UNBRACKETED TITLES: ROMAN NUMERALS: and a STATEMENT OF SIGNIFICANT VARIABLES.

Turn to page 437. Under 569.686-014 what does "caul" mean?

Turn to page 367. Under 529.687-110, this worker may perform some of the same duties as _____

Turn to page 406. Under 335.683-050, this worker may have a close working relationship with a worker identified as a _____.

Turn to page 724 and examine 736.381-010 and 736.684-010. What is the meaning of the Roman numeral I and II used in the occupational title?

(6) Undefined Related Titles

Under related titles, if applicable, appear at the end of the occupational definition, in all capital letters, preceded by the phrase, "May be designated according to... (or a similar phrase)."

Turn to page 137. Under code 222.387-034, what other title is related to Material Clerk?

Organization of the DOT

You will find an excellent explanation of the organization of the DOT on page XXIII.

METHODS OF LOCATING OCCUPATIONAL CODES

There are several methods of locating an occupational code. The route that you have just gone through in this exercise is the long way of locating occupational definitions. But this should help you understand the makeup of the digits and their significance.

There are three other methods of locating occupational codes.

(1) Using the alphabetical index of occupational titles. (see page XXVII)

This index is located in pages 965 to 1156. The one problem you may encounter when using this index is knowing the specific title you want to research. A simple one to locate would be BARTENDER. See page 975. Others may be a bit more complicated.

- (2) Using the occupational titles arranged by industry designation.
(see page XXVII)
This index is located in pages 1157 to 1361. Here the one problem you may encounter when using this index is knowing the specific industry where the occupation will be found.

- (3) Industry Index. (see page XXVI)

This index is located on pages 133 to 1367. This index locates the page number where the DOT occupations for that industry can be found.

FINAL EXERCISE:

- (1) Locate the DOT for someone who is interested in being a small engine mechanic. What is the DOT code? _____
What do the middle three numbers indicate? _____

- (2) Locate two occupational codes for your area.

- (1) _____ (number) _____ (title)
(2) _____ (number) _____ (title)

Choose one of these and answer the following questions:

What is the industry designation? _____

What is the lead statement? _____

List the worker Actions: (verb)

List the "may" actions: (verb)

What tools, machine, equipment etc. are identified?

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

(3) What type of activities could your students be involved with using the DOT?

(4) What was the most beneficial thing you learned about the DOT?

(5) Do you feel that you can now use the DOT to your advantage in the classroom?

WHY? _____

(6) What other type of activity do you feel should be added to this exercise?

S T E P

[illegible]

BERKS VOCATIONAL-TECHNICAL SCHOOL

S T E P

Using the labor market projections provided in Appendix A, respond to the following questions:

1. What is the occupation you are analyzing? _____
2. What was the estimated number of people employed in that occupation in 1978? _____
3. What are the estimated annual openings? _____
4. What is the ratio of openings per 1,000 employees? _____
5. What conclusions can you draw from the data supplied?
6. What are your personal feelings about the outlook for your occupation?
7. What other labor projections have you examined for your occupation?
8. What outlooks are expressed in trade journals for your field?

BERKS VOCATIONAL-TECHNICAL SCHOOL

S T E P

CRAFT COMMITTEE RESPONSE TO OCCUPATIONAL OUTLOOK

Craft Committee Member's Name _____

Place of Employment _____

Position or occupation _____

Using the craft committee's major area of interest

Please respond to the following questions as accurately as possible:

TITLE OF POSITIONS IN
WHICH VO-TECH STUDENTS
COULD BE EMPLOYEDNUMBER OF PRESENT
PEOPLE EMPLOYED
IN THIS TITLENUMBER OF PROJECTED
EMPLOYEES TO BE ADDED
IN THE NEXT 3-5 YEARS

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

What new or emerging occupations within your craft committee area do you see on the horizon for your industry which you may or may not presently need but feel that future needs and requirements would have ramifications on our vocational-educational programs?

TITLE

PROJECTED # OF NEED

PROJECTED YEAR OF NEED

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

T H A N K Y O U !

BERKS VOCATIONAL-TECHNICAL SCHOOL

S T E P

VEMIS CODE _____ LOCAL TITLE _____

We have examined the attached course description and have concluded the following:

- _____ Accepted as presented
 _____ Accepted with indicated change
 _____ Rejected. (Please attach rationale)

(NAME)	CRAFT ADVISORY MEMBER	INSTRUCTOR	BVTS ADMINISTRATOR	FORMER STUDENT	PARENT	COMMUNITY MEMBER

BERKS VOCATIONAL TECHNICAL SCHOOL

S T E P

COURSE PHILOSOPHY

VERMIS CODE _____

LOCAL TITLE _____

BERKS VOCATIONAL TECHNICAL SCHOOL

S T E P

CHARACTERISTICS OF WORKERS
AND JOB ENVIRONMENTAL FACTORS

VERIS CODE _____

LOCAL TITLE _____

LOCAL TITLE _____

DOT'S

87

88

BERKS VOCATIONAL TECHNICAL SCHOOL

CRAFT ADVISORY TASK APPROVAL SHEET

VEMIS CODE _____

LOCAL TITLE _____

(NAME)

	CRAFT ADVISORY MEMBER	INSTRUCTOR	BVTS ADMINISTRATOR	FORMER STUDENT	PARENT	COMMUNITY MEMBER

We have examined the attached list of tasks and agree that they represent the DOT's identified as indicated by the check marks ✓. We feel that the tasks represent the occupational skills and technologies as found in the field today.

RESPONSE SHEET FOR PERFORMANCE OBJECTIVE LEARNING ACTIVITY

Instructions: Choose 2 performance objectives from the next page and analyze their construction using the Objective Edit Guide on page 3 of this activity. Respond to the edit questions and place your answers below

Performance Objective # _____

Performance Objective # _____

BEHAVIOR:

1. Yes No

2. Yes No

3. Yes No

4a _____

4b _____

4c _____

BEHAVIOR:

1. Yes No

2. Yes No

3. Yes No

4a _____

4b _____

4c _____

CONDITIONS:

1. Yes No

2. Yes No

3. Yes No

CONDITIONS:

1. Yes No

2. Yes No

3. Yes No

STANDARDS:

1. Yes No

2. Yes No

3. Yes No

4. Yes No

5. Yes No

STANDARDS:

1. Yes No

2. Yes No

3. Yes No

4. Yes No

5. Yes No

COMMENTS:

PERFORMANCE OBJECTIVE LEARNING ACTIVITY

- P.O. 1 Given dental compound impression material, a compound heater, trays and all other necessary armamentarium, prepare the compound impression material. All steps in the checklist must be acceptably completed.
- P.O. 2 Given a drill press, work order, metal and necessary safety equipment, drill hole as specified. Hole will be $\frac{1}{32}$ " (.75mm) of specified location.
- P.O. 3 Furnished with a program and programming guidelines, review program for adherence to the guidelines. Any deviation from the guidelines must be agreed upon by the instructor.
- P.O. 4 Given a patient in simulated shock. Apply steps to prevent or relieve shock. Patient must be covered to prevent loss of body heat. Patient must be positional so as to have gravity assist blood flow to the brain.
- P.O. 5 Paint a wooden door using a brush.

PERFORMANCE OBJECTIVE EDIT GUIDE

PERFORMANCE OBJECTIVES

1. BEHAVIOR

- A. Is the behavior stated with measurable action verbs?
- B. Is the statement compatible with the action in the task statement?
- C. Is the action verb accompanied by an object?
- D. Has the statement been qualified, when necessary to specify;
 - 1. With what?
 - 2. To what degree?
 - 3. For what end product?

2. CONDITIONS

- A. Are all necessary conditions included?
- B. Are the conditions possible in all instructional settings?
- C. Have clearly implied or obvious conditions (paper, pencil, etc.) been left out? When such items are clearly understood it is not usually necessary to write them into an objective.

3. STANDARDS

- A. Does the standard represent the desired level of proficiency?
- B. Is it realistic and attainable?
- C. Does it set criteria for evaluation of the product whenever possible?
- D. Does it eliminate subjectivity on the part of the evaluation?
- E. Is it referenced, whenever possible, to a reliable published source?

The material in this section was taken from microfiche ed 149041
DEVELOPING PERFORMANCE OBJECTIVES AND CRITERION-REFERENCE MEASURES
FOR PERFORMANCE BASED INSTRUCTION IN VOCATIONAL EDUCATION 1978

(Alabama State Dept. of Education, DIVISION OF VOCATIONAL EDUCATION)

DEMIS CODE: _____ LOCAL TITLE: _____

TASK:

PERFORMANCE OBJECTIVE:

TASK:

PERFORMANCE OBJECTIVE:

TASK:

PERFORMANCE OBJECTIVE:

TASK:

PERFORMANCE OBJECTIVE:

TASK:

PERFORMANCE OBJECTIVE:

TASK:

PERFORMANCE OBJECTIVE:

BERKS VOCATIONAL-TECHNICAL SCHOOL

CRAFT ADVISORY TASK APPROVAL SHEET

VEMIS CODE: _____

LOCAL TITLE: _____

(NAME)	CRAFT ADVISORY MEMBER	INSTRUCTOR	BVTS ADMINISTRATOR	FORMER STUDENT	PARENT	COMMUNITY MEMBER

We have examined the attached list of performance objectives and agree that they represent the DOT'S identified as indicated by the check marks ✓. We feel that the tasks represent the occupational skills and technologies as found in the field today.

SOURCE: A REPORT ON EMPLOYMENT & OCCUPATIONAL TRENDS FOR VOCATIONAL EDUCATION
IN PENNSYLVANIA. Department of Labor and Industry, Office of Employment
 Security, September, 1980.

Table 2

BROAD OCCUPATIONAL CATEGORIES OF WORKERS IN 1978 ^{1/}
 ESTIMATED ANNUAL OPENINGS IN PENNSYLVANIA ^{2/}

BROAD OCCUPATIONAL CATEGORY	ESTIMATED 1978 EMPLOYMENT (in thousands)		ESTIMATED ANNUAL OPENINGS			
	Number	Percent	TOTAL	Due to		RATIO per 1,000 emp. ^{3/}
				Growth	Labor Force Separations	
ALL OCCUPATIONS	4,888.0	100.0	242,900	46,900	196,000	50
Clerical	913.0	18.7	67,400	15,000	52,400	74
Production & Maintenance	1,866.5	38.2	61,700	9,500	52,200	33
Service	602.3	12.3	43,100	8,700	34,400	72
Professional & Technical	684.1	14.0	35,200	8,600	26,600	52
Managerial & Official	445.7	9.1	19,000	4,400	14,600	43
Sales	306.5	6.3	15,600	2,600	13,000	51
Farm Workers	69.9	1.4	900	-1,800	2,700	13

^{1/} Estimated for 1978 based on 1974 survey and projections. Includes nonagricultural wage and salary workers, farm workers, self-employed, unpaid family workers, and workers on unpaid leave a full payroll period.

^{2/} Annual average based on 1974-85 projections. Excludes openings resulting from workers changing jobs.

^{3/} Ratio of estimated annual openings per 1,000 of 1978 employment for given occupational category.

Estimated Annual Openings
In Pennsylvania
By Selected Occupations
1978

Table 2
(Cont'd.)

	ESTIMATED 1978 EMPLOYMENT	ESTIMATED ANNUAL OPENINGS			
		TOTAL	Due to		RATIO per 1,000 emp.
			Growth	Labor Force Separations	
<u>PROFESSIONAL AND TECHNICAL</u>	684,100	35,200	8,600	26,600	51
Accountants	43,000	1,600	300	1,300	37
Clergymen	12,700	600	100	500	47
Computer System Analysts & Programmers	19,000	1,000	600	400	53
Dentists	6,200	700	300	400	113
Drafters	28,500	1,000	600	400	35
Editors and Reporters	7,900	500	200	300	63
Engineers	68,000	1,750	550	1,200	26
Chemical	3,400	75	25	50	22
Civil	8,300	275	75	200	33
Electrical	15,700	400	150	250	25
Industrial	12,000	275	75	200	23
Mechanical	11,800	350	150	200	30
Sales Engineers	3,000	75	25	50	25
Other Engineers	13,800	300	50	250	22
Engineering & Science Technicians, Except Drafters	35,400	1,300	600	700	37
Health Therapists	6,500	700	350	250	108
Health Technicians	21,000	2,300	800	1,500	109
Clinical Lab Technicians	9,200	800	200	600	87
Dental Hygienists	1,000	300	150	150	300
Radiological Technicians	4,600	400	100	300	87
Other Health Technicians	6,200	800	350	450	129
Lawyers	16,400	1,300	500	800	79
Librarians	10,000	700	100	600	70
Personnel, Labor Relations Spec.	18,000	750	100	550	42
Pharmacists	8,100	425	50	375	52
Physicians	19,000	1,400	600	800	74
Registered Nurses	48,800	4,100	900	3,200	84
Social Workers	18,000	1,200	300	900	67
Teachers	172,600	7,200	-1,100	8,300	42
College & University	24,600	200	- 400	600	8
Elementary School	63,400	4,300	100	4,200	67
Preschool & Kindergarten	9,500	600	0	600	63
Secondary School	60,700	1,200	- 900	2,100	20
Other (Adult Ed., etc.)	14,400	1,000	200	800	76
Vocational, Educational Counselors	6,600	600	300	300	91
Other Professional & Technical	118,800	6,200	2,000	4,200	52

Estimated Annual Openings
In Pennsylvania
By Selected Occupations
1978

Table 2
(Cont'd.)

	ESTIMATED 1978 EMPLOYMENT	ESTIMATED ANNUAL OPENINGS			
		TOTAL	Due to		RATIO per 1,000 emp.
			Growth	Labor Force Separations	
MANAGERIAL AND OFFICIAL	445,700	19,000	4,400	14,600	43
Bank & Financial Managers	22,600	1,400	600	800	62
Building Managers & Supt.	3,200	300	100	200	94
Health Administrators	6,700	500	200	300	75
Inspectors, Public	6,100	400	150	250	66
Construction	1,000	100	25	75	100
Other Inspectors	5,100	300	125	175	59
Managers, Eating & Drinking Places	25,500	900	25	900	35
Office Managers, nec	16,600	1,000	400	600	60
Public Officials & Administrators, nec	12,200	600	100	500	49
Purchasing Agents & Buyers	21,800	1,300	500	800	60
Sales Managers, Retail Trade	16,200	800	300	500	49
Sales Managers, Ex. Retail Trade	17,300	700	300	400	40
School Administrators	12,100	600	200	400	50
College	2,700	150	50	100	56
Elementary & Secondary	9,400	450	150	300	48
Other Managerial & Officials	240,700	10,500	1,600	8,900	44
CLERICAL OCCUPATIONS	913,400	67,400	15,000	52,400	74
Bank Tellers	19,300	1,600	400	1,200	83
Billing Clerks	10,900	1,000	300	700	92
Bookkeepers & Accounting Clerks	85,200	4,900	100	4,800	58
Cashiers	58,900	3,700	300	3,400	83
Counter Clerks, Except Food	18,200	1,400	300	1,100	77
Estimators & Investigators, nec	21,000	1,200	300	900	57
File Clerks	18,100	1,225	25	1,200	68
Office Machine Operators (esp. Key punch, Computer & Peripheral)	41,800	1,800	- 100	1,900	43
Payroll & Timekeeping Clerks	14,300	900	200	700	63
Postal Clerks, Mail Carriers & Mail Handlers	42,300	1,100	- 50	1,150	26
Receptionists	21,700	2,200	500	1,700	101
Secretaries	192,200	21,200	5,600	15,600	110
Shipping & Receiving Clerks	33,900	1,300	400	900	38
Statistical Clerks	20,200	1,025	25	1,000	51
Stock Clerks & Store Keepers	29,500	1,100	200	900	37
Teacher Aides, Except Monitors	10,100	1,100	600	500	109
Telephone Operators	20,000	1,000	- 200	1,200	50
Typists	70,000	6,300	1,000	5,300	90
Other Clerical	195,800	13,400	5,200	8,200	68

Estimated Annual Openings
In Pennsylvania
By Selected Occupations
1978Table 2
(Cont'd.)

	ESTIMATED 1978 EMPLOYMENT	ESTIMATED ANNUAL OPENINGS			RATIO per 1,000 emp.
		TOTAL	Due to		
			Growth	Labor Force Separations	
<u>SALES</u>	306,500	15,600	2,600	13,000	51
Insurance Agents & Brokers	24,000	900	200	700	37
Real Estate Agents	13,000	700	100	600	54
Other Salesmen & Sales Workers	268,000	14,000	2,000	12,000	52
<u>SERVICE</u>	602,300	43,100	8,700	34,400	72
Bartenders	20,000	1,100	300	800	55
Child Care Workers	30,500	3,100	700	2,400	101
Cooks, Except Private	41,500	2,800	700	2,100	67
Food Counter & Fountain Workers	18,400	1,200	200	1,000	65
Guards	31,500	1,900	100	1,800	60
Hairdressers, Cosmetologists	29,900	2,300	300	2,000	77
Janitors, Porters, Cleaners	118,000	9,000	2,000	7,000	76
Nurse Aides, Orderlies	37,000	3,600	1,200	2,400	97
Police & Detectives	49,200	900	500	400	18
Practical Nurses	32,600	4,600	1,800	2,800	141
Private Household Cleaners, Servants	25,000	2,000	0	2,000	80
Waiters/Waitresses	62,400	5,300	500	3,800	69
Other Service	106,300	6,300	400	5,900	59
<u>PRODUCTION AND MAINTENANCE</u>	1,866,500	61,700	9,500	52,200	33
Assemblers	61,700	2,900	700	2,200	47
Carpenters (inc. Apprentices)	57,700	2,600	1,100	1,500	45
Checkers, Examiners, Inspectors, Especially Manufacturing	69,300	4,100	1,100	3,000	59
Construction Laborers, except Carpenter Helpers	47,700	1,500	400	1,100	31
Cutting Operatives, nec	24,700	900	100	800	36
Deliverymen & Route Workers	55,200	1,200	200	1,000	22
Electricians (inc. Apprentices)	34,700	1,200	600	600	35
Excavating, Grading & Bulldozing Machine Operators	19,500	1,100	700	400	56
Gardeners & Groundskeepers, Except Farm	24,900	1,400	400	1,000	56
Mechanics, Installers & Repairers	203,400	5,800	2,100	3,700	29
Air Conditioning, Heating & Refrigeration Mechanics	14,000	600	300	300	43
Aircraft Mechanics	2,500	100	50	50	40
Auto Body Repairers	9,800	100	0	100	10
Auto Mechanics (inc. Apprentices)	55,000	1,600	700	900	29
Data Processing Machine Repairers	3,000	200	175	25	67
Elec. Power Line Installers, Reprs.	6,000	125	50	75	21
Heavy Equipment Mechanics, Inc. Diesel	51,000	1,500	400	1,100	29

Estimated Annual Openings
In Pennsylvania
By Selected Occupations
1978

Table 2
(Cont'd.)

	ESTIMATED 1978 EMPLOYMENT	ESTIMATED ANNUAL OPENINGS			RATIO per 1,000 emp.
		TOTAL	Due to		
			Growth	Labor Force Separations	
<u>PRODUCTION AND MAINTENANCE (Cont'd.)</u>					
<u>Mechanics, Installers & Repairers (Continued)</u>					
Household Appliance Mechanics	8,000	300	100	200	37
Other Office Machine Repairers	3,500	150	100	50	43
Radio & Television Repairers	6,700	300	200	100	33
Telephone Installers & Repairers	16,800	200	50	150	12
Other Mechanics, Installers & Repairers	27,100	600	0	600	22
Metalworking Crafts & Operatives	153,000	3,100	- 100	3,200	20
Packers & Wrappers	60,900	2,900	200	2,700	48
Sewers & Stitchers	101,500	5,600	- 200	5,800	55
Stock, Freight & Material Handlers	80,900	1,700	0	1,700	21
Taxi Drivers & Chauffeurs	11,000	1,000	500	500	91
Truck Drivers	84,900	1,700	300	1,400	20
Welders & Flame Cutters	48,300	1,700	700	1,000	35
Other Production & Maintenance	727,200	21,300	700	20,600	29

nec - not elsewhere classified

Table 3

Industries In Pennsylvania With
Largest Growth In Employment
1972 - 1979

<u>Industry</u>	<u>Percent Change 1972 - 1979</u>
Manufacturing	
Nonelectrical machinery	8.8
Electronic Components and Accessories	16.5
Motor Vehicles and Equipment	23.5
Railroad Equipment	37.0
Misc. Transportation Equipment	98.4
Mechanical Measuring & Controlling Devices	27.0
Nonmanufacturing	
Bituminous Coal & Lignite Mining	50.6
General Building Construction	3.4
Special Trade Contractors	4.7
Transportation	5.1
Wholesale Trade	15.1
Retail Trade	15.9
Banking	23.5
Insurance	17.0
Business Services	45.1
Health Services	39.2
Nursing & Personal Care Facilities	88.5
Local Government	20.8

PENNSYLVANIA
TREND DEMAND FOR SELECTED OCCUPATIONS
1974 THROUGH PROJECTED 1985

2,000+ ANNUAL AVERAGE JOB OPENINGS

Assemblers	Machine Operator, General
Bookkeepers	Managers & Administrators, General
Building Interior Cleaners	Nurses Aides
Carpenters and Apprentices	Nurses, Practical
Cashiers	Nurses, Registered
Checkers, Examiners	Operatives, General
Child Care Workers	Packer, Wrapper Meat Produce
Clerical Workers, Misc.	Receptionists
Cooks, Private	Salespersons
Elementary School Teachers	Secretaries, General
Hairdressers, Cosmetologists	Sewers and Stitchers
Household Cleaners and Servants, Private	Typists
Janitors and Sextons	Waiter/Waitress

This group of occupations comprises 53.2% of annual average job openings for 1974 projected through 1985.

1,000 to 2,000 ANNUAL AVERAGE JOB OPENINGS

Accountants	Guards
Automobile Mechanic and Apprentice	Heavy Equip. Mechanic, Incl. Diesel
Bank Financial Manager	Lawyers
Bank Tellers	Legal Secretaries
Bartenders	Office Managers
Billing Clerks	Physicians, Med. and Osteo.
Cleaners, Lodging and Quarters	Plumbers and Pipefitters
Construction Laborers	Shipping and Receiving Clerks
Counter Clerks, Exc. Food	Social Worker
Delivery and Route Workers	Statistical Clerk
Draftsman	Stock Clerk and Storekeeper
Electricians and Apprentices	Teachers, Secondary Sch.
File Clerks	Teachers Aides, Exc. Monitor
Food Counter and Fountain Workers	Telephone Operator
Food Workers, Exc. Private	Truck Driver
Gardeners and Groundskeepers, Exc. Farm	Welders & Flame Cutters

This group of occupations comprises 18.0% of annual average job openings for 1974 projected through 1985.

Continued on next page.

Note: The listed job openings are only due to growth and labor force separations.

PENNSYLVANIA
TREND DEMAND FOR SELECTED OCCUPATIONS
1974 THROUGH PROJECTED 1985 (CONT'D)

Table 11
(Cont'd.)

500 to 1,000 ANNUAL AVERAGE JOB OPENINGS

Air Cond., Heating and Refrig. Mechanic
Buyers, Wholesale and Retail
Child Care Workers
Clerical Supervisor
Clergy Member
Clinical Lab Technician
Computer Peripheral Equip. Opr.
Computer Programmer
Cutting Operative
Dental Assistants
Dentists
Dishwashers
Editors and Reporters
Engineers, Science Technology
Excavation and Ground Mach. Opr.,
Exc. Bulldozer
Expeditors, Product Controllers
Farmers (Owners and Tenants)
Forklift, Towmotor Operatives
Freight and Material Handlers
Health Aides
Health Technicians, Other
Insurance Agents, Brokers
Keypunch Operator

Laborers, General
Laundry and Dry Cleaning Operatives
Librarian
Library Attendant, Asst.
Mail Handler, Exc. Post Office
Medical Secretary
Mine Operatives
Officials, Admin. and Public
Painters and Apprentices
Payroll Timekeeping Clerk
Personnel, Labor Relations
Police and Detectives
Purchasing Agents
Real Estate Agents and Brokers
Restaurant, Cafe and Bar Mgrs.

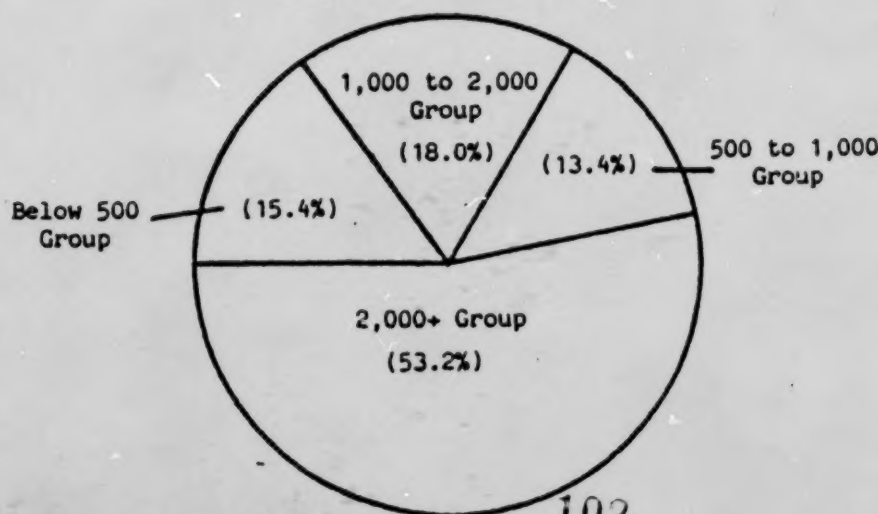
Sales Managers
Stock Handlers
Taxicab Drivers, Chauffeurs
Teachers, Excl. College and Univ.
Teachers, Kindergarten
Therapists
Vocational Education Counselor

This group of occupations comprises 13.4% of annual average job openings for 1974 projected through 1985.

The combined groups comprise 84.6% of annual average job openings for 1974 projected through 1985.

PERCENT OF ANNUAL AVERAGE JOB OPENINGS BY SELECTED GROUP SIZE
1974 PROJECTED THROUGH 1985

Chart 1



TOP TWENTY INDIVIDUAL OCCUPATIONS IN ALLENTOWN-BETHLEHEM-EASTON SMSA

BY TOTAL JOB OPENINGS AND PERCENT GROWTH: 1974 to 1985
(11 year cumulative data)

BY TOTAL JOB OPENINGS				BY PERCENT GROWTH		
OCCUPATION	TOTAL	DUE TO GROWTH	DUE TO LABOR FORCE SEPARATIONS	OCCUPATION	PERCENT GROWTH	TOTAL JOB OPENINGS
1. Severs and stitchers	11,170	1,050	10,120	1. Dental hygienists	251.9	340
2. Secretaries, general	10,430	3,150	7,280	2. Teachers aides, except monitors	98.3	610
3. Bookkeepers	3,420	350	3,070	3. Tool programmers, numerical	94.1	20
4. Assemblers	3,400	1,080	2,320	4. Health record technologists	88.9	60
5. Typists	3,320	660	2,660	5. Veterinarians	86.7	30
6. Elementary school teachers	3,260	290	2,970	6. Vocational, educational counselors	84.0	560
7. Registered nurses	3,080	920	2,160	7. Practical nurses	81.9	2,420
8. Waiters	2,860	420	2,440	8. Asbestos, insulation workers	77.9	120
9. Janitors and sextons	2,820	490	2,330	9. Radio operators	72.2	90
10. Practical nurses	2,420	1,050	1,370	10. Therapy assistants	71.4	10
11. Cashiers	2,310	500	1,810	11. Therapists	70.9	370
12. Hairdressers, cosmetologists	2,220	620	1,600	12. Adult education teachers	67.6	270
13. Cooks, except private	2,150	720	1,430	13. Childcare workers, except private	66.5	570
14. Carpenters and apprentices	2,130	1,030	1,100	14. Real estate appraisers	65.8	100
15. Nurses aides, orderlies	2,070	820	1,250	15. School monitors	64.9	130
16. Packer, wrapper, except meat, produce	1,970	290	1,680	16. Dentists	64.3	310
17. Bank tellers	1,600	610	990	17. Data processing machine repairers	62.9	100
18. Welders and flame cutters	1,510	790	720	18. Welfare service aides	62.5	350
19. Truck drivers	1,410	520	890	19. Operations, systems research	60.3	210
20. Secondary school teachers	1,340	-230	1,570	20. Animal caretakers, except farm	58.4	140
Top 20 occupations comprise 36 percent of total job openings.				Average all occupations	16.3	xxx

OCCUPATION EMPLOYMENT SUMMARY BY MAJOR INDUSTRY DIVISION - 1974 AND 1985

ALLENTOWN-BETHLEHEM-EASTON STANDARD METROPOLITAN STATISTICAL AREA (SMSA)

(Area includes all of Carbon, Lehigh and Northampton Counties in Pennsylvania and Warren County, New Jersey)

	Year	Total All Industries	Agri., Forestry, Fisheries	Mining	Construction	Manufacturing	Transp., Comm., Utilities	Trade	Finance, Insurance, R. Estate	Service Industries	Public Admin.
Total, All Occupations	74	273,928	4,298	714	16,576	115,559	14,565	47,867	8,130	58,902	7,317
	85	318,636	3,978	746	21,902	122,707	16,713	54,758	10,496	76,955	10,381
Professional and Technical Workers	74	34,901	80	51	390	9,160	1,081	1,094	283	22,042	720
	85	43,191	268	67	660	10,397	1,416	1,369	386	27,521	1,102
Managers, Officials, Nonfarm Proprietors	74	22,046	13	52	1,750	5,396	1,151	7,700	1,454	3,712	818
	85	26,129	14	53	2,043	5,898	1,337	8,585	2,085	5,015	1,096
Sales Workers	74	14,250	33	0	29	1,506	110	10,675	1,581	308	8
	85	16,368	98	0	44	1,654	116	12,552	1,689	409	6
Clerical Workers	74	40,654	15	36	769	13,769	2,604	7,382	4,022	9,562	2,495
	85	51,366	15	39	1,103	15,583	2,988	8,746	5,372	14,107	3,413
Crafts and Kindred Workers	74	42,131	85	175	9,801	20,016	3,649	4,818	162	3,072	353
	85	49,752	167	201	13,247	21,753	4,300	5,599	220	3,721	544
Operatives	74	70,366	45	325	1,187	56,405	4,216	5,571	4	2,394	219
	85	75,142	77	311	1,591	59,414	4,705	5,707	0	2,922	415
Service Workers	74	30,498	11	5	89	2,278	221	8,390	383	16,700	2,421
	85	37,546	12	5	112	1,780	200	9,802	474	21,763	3,398
Laborers, Except Farm	74	15,553	487	70	2,561	7,029	1,533	2,237	241	1,112	285
	85	16,465	650	70	3,102	6,228	1,651	2,598	267	1,497	402
Farmers and Farm Workers	74	3,529	3,529	0	0	0	0	0	0	0	0
	85	2,677	2,677	0	0	0	0	0	0	0	0

TOP TWENTY INDIVIDUAL OCCUPATIONS IN READING SMSA

BY TOTAL JOB OPENINGS AND PERCENT GROWTH: 1974 to 1985
(11 year cumulative data)

BY TOTAL JOB OPENINGS				BY PERCENT GROWTH		
OCCUPATION	TOTAL	DUE TO GROWTH	DUE TO LABOR FORCE SEPARATIONS	OCCUPATION	PERCENT GROWTH	TOTAL JOB OPENINGS
1. Secretaries, general	5,620	1,620	4,000	1. Dental hygienists	215.1	210
2. Sewers and stitchers	2,630	- 470	3,100	2. Veterinarians	100.0	10
3. Waiters	1,880	400	1,480	3. Boilermakers	95.3	110
4. Janitors and sextons	1,680	310	1,370	4. Archivists and curators	91.7	20
5. Elementary school teachers	1,640	70	1,570	5. Teachers aides, except monitors	83.4	330
6. Practical nurses	1,620	700	920	6. Practical nurses	81.9	1,670
7. Bookkeepers	1,500	150	1,350	7. Physicians	79.4	430
8. Typists	1,460	300	1,160	8. Operations, systems research	78.7	100
9. Packer, wrapper, except meat, produce	1,410	180	1,230	9. Urban and regional planners	77.8	20
10. Cashiers	1,400	310	1,090	10. Vocational, educational counselors	76.6	180
11. Registered nurses	1,340	350	990	11. Therapists	75.3	240
12. Assemblers	1,220	280	940	12. Animal caretakers, except farm	72.2	120
13. Cooks, except private	1,170	360	810	13. Radio operators	71.4	20
14. Nurses aides, orderlies	1,160	490	670	14. Data processing machine repairers	70.4	60
15. Childcare workers, except private	960	380	580	15. Secretaries, medical	69.0	440
16. Hairdressers, cosmetologists	960	190	770	16. Secretaries, legal	68.8	290
17. Truck drivers	800	300	500	17. Dentists	65.5	210
18. Receptionists	680	230	450	18. Surveyors	64.3	110
19. Drafters	660	430	230	19. Health aides, except nursing	63.5	360
20. Carpenters and apprentices	660	250	410	20. Dancers	62.5	30
Top 20 occupations comprise 38 percent of total job openings.				Average all occupations		xxx

OCCUPATION EMPLOYMENT SUMMARY BY MAJOR INDUSTRY DIVISION - 1974 AND 1985

READING STANDARD METROPOLITAN STATISTICAL AREA (SMSA)
(Area includes all of Berks County)

	Year	Total All Industries	Agric., Forestry, Fisheries	Mining	Construction	Manufacturing	Transp., Commun., Utilities	Trade	Finance, Insurance, R. Estate	Service Industries	Public Admin.
Total, All Occupations	74	140,884	3,663	1,229	7,007	54,031	7,246	26,457	5,184	32,515	3,552
	85	158,003	3,025	1,127	8,202	53,797	8,097	30,586	6,028	42,270	4,371
Professional and Technical Workers	74	16,213	17	47	92	2,725	480	347	177	12,040	283
	85	19,673	101	45	124	2,968	585	395	214	14,800	421
Managers, Officials, Nonfarm Proprietors	74	11,201	23	43	674	2,477	613	3,969	867	2,112	423
	85	12,798	24	39	699	2,608	727	4,540	1,072	2,562	527
Sales Workers	74	8,425	8	2	37	858	57	6,225	993	244	1
	85	9,494	6	2	54	859	53	7,136	1,098	286	0
Clerical Workers	74	20,120	38	38	456	5,323	1,260	4,145	2,759	4,682	1,419
	85	24,988	77	34	536	5,703	1,443	5,157	3,204	6,943	1,891
Crafts and Kindred Workers	74	20,971	28	384	4,446	9,245	2,080	2,442	86	2,118	142
	85	23,293	65	410	5,266	9,519	2,284	2,789	93	2,643	224
Operatives	74	36,607	26	572	292	29,085	2,087	3,221	32	1,200	80
	85	36,487	41	466	323	28,382	2,374	3,323	51	1,367	160
Service Workers	74	16,840	6	25	41	1,163	128	4,778	149	9,517	1,033
	85	21,065	4	16	38	919	114	5,697	163	12,693	1,421
Laborers, Except Farm	74	7,179	189	118	969	3,155	541	1,327	121	602	157
	85	7,732	234	115	1,162	2,839	517	1,549	133	956	227
Farmers and Farm Workers	74	3,328	3,328	0	0	0	0	0	0	0	0
	85	2,473	2,473	0	0	0	0	0	0	0	0

PERCENTAGE DISTRIBUTION OF EMPLOYMENT BY OCCUPATION WITHIN INDUSTRY - 1974 AND 1985 ^{a/}

READING SMSA

	Year	Total All Industries	Agri., Forestry, Fisheries	Mining	Construction	Manufacturing	Transp., Commun., Utilities	Trade	Finance, Insurance, R. Estate	Service Industries	Public Admin.
Total, All Occupations	74	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	85	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Professional and Technical Workers	74	11.5	0.5	3.8	1.3	5.0	6.6	1.3	3.4	37.0	8.1
	85	12.5	3.3	4.0	1.5	5.5	7.2	1.3	3.6	35.1	8.6
Managers, Officials, Nonfarm Proprietors	74	8.0	0.6	3.5	9.6	4.6	8.5	15.0	16.7	6.5	11.9
	85	8.1	0.8	3.5	8.5	4.8	9.0	14.8	17.8	6.1	10.8
Sales Workers	74	6.0	0.2	0.2	0.5	1.6	0.8	23.5	19.2	0.8	2.1
	85	6.0	0.2	0.2	0.7	1.6	0.7	23.3	18.2	0.7	0
Clerical Workers	74	14.3	1.0	3.1	6.5	9.9	17.4	15.7	55.2	14.4	30.9
	85	15.8	2.5	3.0	6.5	10.6	17.8	16.9	53.2	16.4	38.8
Crafts and Kindred Workers	74	14.9	0.8	31.2	63.5	17.1	28.7	9.2	1.7	6.5	4.0
	85	14.7	2.1	36.4	64.2	17.7	28.2	9.1	1.5	6.3	4.6
Operatives	74	26.0	0.7	46.5	4.2	53.8	28.8	12.2	0.6	3.7	2.5
	85	23.1	1.4	41.3	3.9	52.8	29.3	10.9	0.8	3.2	3.3
Service Workers	74	12.0	0.2	2.0	0.6	2.2	1.8	18.1	2.9	29.3	29.1
	85	13.3	0.1	1.4	0.5	1.7	1.4	18.6	2.7	30.0	29.2
Laborers, Except Farm	74	5.1	5.2	9.6	13.8	5.8	7.5	5.0	2.3	1.9	4.4
	85	4.9	7.7	10.2	14.2	5.3	6.4	5.1	2.0	2.3	4.7
Farmers and Farm Workers	74	2.4	90.9	0	0	0	0	0	0	0	0
	85	1.6	81.8	0	0	0	0	0	0	0	0

^{a/} Percentages may not add to 100.0 percent due to rounding.
^{b/} Less than half of 0.1 percent.

PERCENTAGE DISTRIBUTION OF EMPLOYMENT BY INDUSTRY WITHIN OCCUPATION - 1974 AND 1985 ^{a/}

READING SMS:

	Year	Total All Industries	Agri., Forestry, Fisheries	Mining	Construction	Manufacturing	Transp., Commun., Utilities	Trade	Finance, Insurance, R. Estate	Service Industries	Public Admin.
Total, All Occupations	74	100.0	2.6	0.9	5.0	38.4	5.1	18.8	3.7	23.1	2.5
	85	100.0	1.9	0.7	5.2	34.0	5.1	19.4	3.8	26.8	3.1
Professional and Technical Workers	74	100.0	0.1	0.3	0.6	16.8	3.0	2.1	1.1	74.3	1.8
	85	100.0	0.5	0.2	0.6	15.1	3.0	2.0	1.1	75.3	2.1
Managers, Officials, Nonfarm Proprietors	74	100.0	0.2	0.4	6.0	22.1	5.5	35.4	7.7	18.9	3.8
	85	100.0	0.2	0.3	5.5	20.4	5.7	35.5	8.4	20.0	4.1
Sales Workers	74	100.0	0.1	b/	0.4	10.2	0.7	73.9	11.8	2.9	b/
	85	100.0	0.1	b/	0.6	9.0	0.6	75.2	11.6	3.0	0
Clerical Workers	74	100.0	0.2	0.2	2.3	26.5	6.3	20.6	13.7	23.3	7.1
	85	100.0	0.3	0.1	2.1	22.8	5.8	20.6	12.8	27.8	7.6
Crafts and Kindred Workers	74	100.0	0.1	1.8	21.2	44.1	9.9	11.6	0.4	10.1	0.7
	85	100.0	0.3	1.8	22.6	40.9	9.8	12.0	0.4	11.3	1.0
Operatives	74	100.0	0.1	1.6	0.8	79.5	5.7	8.8	0.1	3.3	0.2
	85	100.0	0.1	1.3	0.9	77.8	6.5	9.1	0.1	3.7	0.4
Service Workers	74	100.0	b/	0.1	0.2	6.9	0.8	28.4	0.9	56.5	6.1
	85	100.0	b/	0.1	0.2	4.4	0.5	27.0	0.8	60.3	6.7
Laborers, Except Farm	74	100.0	2.6	1.6	13.5	43.9	7.5	18.5	1.7	8.4	2.2
	85	100.0	3.0	1.5	15.0	36.7	6.7	20.0	1.7	12.4	2.9
Farmers and Farm Workers	74	100.0	100.0	0	0	0	0	0	0	0	0
	85	100.0	100.0	0	0	0	0	0	0	0	0

^{a/} Percentages may not add to 100.0 percent due to rounding.

b/ Less than half of 0.1 percent.

READING SMSA
REGISTERED APPLICANTS AND NONAGRICULTURAL JOB OPENINGS
BY PRIMARY OCCUPATIONAL CATEGORIES AND FOR SELECTED OCCUPATIONS

DOT CODE 1	OCCUPATION OR OCCUPATIONAL GROUPING II	REGISTERED APPLICANTS -			NONAGRICULTURAL JOB OPENINGS				RATIO OF CCL. III : VI 1/ X
		TOTAL REGISTERED (12 MOS.) III	ACTIVE SEPT. 30, 1979		TOTAL RECEIVED (12 MOS.) VI	TOTAL FILLED VII	UNFILLED		
			TOTAL IV	FEMALE V			TOTAL VIII	30 DAYS OR MORE IX	
XXX	TOTAL - ALL OCCUPATIONS (INCL. ENTRY)	15,720	5,384	2,642	8,187	5,257	674	454	1.9
0 & 1	PROFESSIONAL, TECHNICAL, MANAGERIAL OCC.	2,303	769	332	1,079	660	124	90	2.1
2	CLERICAL AND SALES OCCUPATIONS	3,231	1,115	813	2,975	1,975	135	75	1.1
3	SERVICE OCCUPATIONS	2,015	720	473	1,115	725	124	77	1.8
4	AGRICULTURE, FISHERY, FORESTRY OCCUPATIONS	332	92	13	53	31	6	5	6.4
5	PROCESSING OCCUPATIONS	550	170	50	329	232	13	11	1.7
6	MACHINE TRADES OCCUPATIONS	1,073	328	72	519	256	70	51	2.1
7	BENCHWORK OCCUPATIONS	1,589	491	325	630	414	66	50	2.5
8	STRUCTURAL WORK OCCUPATIONS	1,357	386	20	830	566	102	81	1.6
9	MISCELLANEOUS OCCUPATIONS	3,270	1,313	544	653	398	34	14	5.0

See footnotes at end of table

(Continued on next page)

DOT CODE I	OCCUPATION OR OCCUPATIONAL GROUPING II	REGISTERED APPLICANTS			NONAGRICULTURAL JOB OPENINGS				RATIO OF (C.I.) III : IV 1/ X
		TOTAL REGISTERED (12 MOS.) III	ACTIVE SEPT. 30, 1979		TOTAL RECEIVED (12 MOS.) VI	TOTAL FILLED VII	UNFILLED		
			TOTAL IV	FEMALE V			TOTAL VIII	30 DAYS OR MORE IX	
003.161.014	ELECTRONICS TECHNICIAN	12	5	0	7	1	1	1	1.7
007.281.010	MECHANICAL DRAFTERS	12	7	0	18	3	5	4	0.7
012.167.066	SYSTEMS ANALYST	10	6	3	5	1	2	2	2.0
020.162.014	PROGRAMER, BUSINESS	8	2	1	10	0	2	1	0.8
022.061.010	CHEMIST, FOOD	7	1	0	4	1	0	0	1.8
029.261.010	LABORATORY TESTER	18	6	2	10	3	0	0	1.8
045.107.010	COUNSELOR, GUIDANCE	34	7	5	4	0	0	0	8.5
079.371.010	DENTAL ASSISTANT	15	5	5	7	3	2	2	2.1
079.374.014	NURSE, LICENSED PRACTICAL	82	15	15	283	280	0	0	0.3
091.227.010	TEACHER, SECONDARY SCHOOL	59	18	4	29	28	0	0	2.0
092.227.010	TEACHER, ELEMENTARY SCHOOL	81	27	25	203	203	0	0	0.4
141	COMMERCIAL ARTISTS	17	7	4	3	1	0	0	5.7
160.167.010	ACCOUNTANT	43	11	1	23	5	2	0	1.9
162.157.038	PURCHASING AGENT	20	7	4	7	0	3	0	2.9
163.167.018	MANAGER, SALES	39	14	0	1	0	1	1	39.0
165.067.010	PUBLIC-RELATIONS REPRESENTATIVE	13	7	2	3	1	1	1	4.3
166	PERSONNEL ADMINISTRATION	27	7	2	13	1	1	1	2.1
169.167.010	ADMINISTRATIVE ASSISTANT	74	34	13	7	3	1	1	10.6
169.167.034	MANAGER, OFFICE	49	14	10	1	1	0	0	49.0
183	MANUFACTURING MANAGERS & OFFICIALS	53	22	3	6	1	3	2	8.8
185	WHOLESALE & RETAIL TRADE MGRS. & OFF.	114	53	25	19	3	6	0	6.0
186	FINANCE, INS., & REAL ESTATE MANAGERS	31	11	1	6	0	0	0	5.2
187.167.106	MANAGER, FOOD SERVICE	40	17	9	1	0	0	0	40.0
189	MANAGERS AND OFFICIALS, NEC	139	47	8	71	25	10	4	2.0
195.107.010	CASEWORKER	31	7	3	4	2	0	0	7.8
201.362.010	LEGAL SECRETARY	19	6	6	6	3	0	0	3.2
201.362.014	MEDICAL SECRETARY	14	7	7	6	2	0	0	2.3
201.362.030	SECRETARY	202	49	49	128	45	17	10	1.6
203.362.010	CLERK - TYPIST	148	38	38	146	67	13	7	1.0
206.362.010	FILE CLERK	26	10	8	29	13	1	0	0.9
209.562.010	CLERK, GENERAL	216	84	76	102	52	14	10	2.1

See footnotes at end of table

(Continued on next page)

DOT CODE I	OCCUPATION OR OCCUPATIONAL GROUPING II	REGISTERED APPLICANTS			NONAGRICULTURAL JOB OPENINGS				RATIO OF COL. III : IV 1/ X
		TOTAL REGISTERED (12 MOS.) III	ACTIVE SEPT. 30, 1979		TOTAL RECEIVED (12 MOS.) VI	TOTAL FILLED VII	UNFILLED		
			TOTAL IV	FEMALE V			TOTAL VIII	30 DAYS OR MORE IX	
519	ORE REFINING & FOUNDRY, NEC	74	17	1	100	76	8	7	0.7
526	COOKING AND BAKING, NEC	26	13	1	14	9	1	0	1.9
529	PROCESSORS, FOOD, TOBACCO & REL. NEC	61	19	6	45	38	0	0	1.4
556	CASTERS AND MOLDERS, NEC	36	17	12	21	15	0	0	1.7
600	MACHINISTS AND RELATED	34	8	0	44	17	12	11	0.8
604	TURKING OCCUPATIONS	13	3	0	20	8	3	3	0.7
606	BORING OCCUPATIONS	27	9	4	9	5	0	0	3.0
609.685.018	PRODUCTION MACHINE TENDER	41	12	1	14	3	1	0	2.9
615	PUNCHING AND SHEARING OCCUPATIONS	47	20	4	19	35	1	1	2.5
616	FABRICATING MACHINE OCCUPATIONS	33	12	3	28	17	0	0	1.2
619	MISCELLANEOUS METALWORKING, NEC	34	16	4	30	22	0	0	1.1
620.261.010	AUTOMOBILE MECHANIC	63	17	0	48	12	16	14	1.3
625.281.010	DIESEL MECHANIC	11	0	0	7	1	2	1	1.6
638.281.014	MAINTENANCE MECHANIC	38	15	1	23	8	1	0	1.7
638.281.018	MILLWRIGHT	12	1	0	9	7	0	0	1.3
651	PRINTING PRESS OCCUPATIONS	23	10	2	12	5	3	1	1.9
685	KNITTERS, OTHER THAN HOSIERY	40	19	10	30	13	5	2	1.3
705	FILING, GRINDING, BUFFING, CLEANING & POLISHING OCCUPATIONS, NEC	75	32	4	30	23	0	0	2.5
706	METAL UNIT ASSEMBLERS & ADJ., NEC	55	17	10	21	11	0	0	2.6
723	ASSEMBLY OF ELEC. APPLIANCES & FIX.	18	8	6	9	7	1	1	2.0
726	ASSEMBLY OF ELEC. COMPONENTS & ACC.NEC	129	7	4	186	166	11	9	0.7
729.687.010	ELECTRICAL ASSEMB. OF ELEC. EQUIP.NEC	72	2	1	8	7	0	0	9.0
741	PAINTERS, SPRAY	20	11	3	11	0	2	1	1.8
781	LAYING OUT, MARKING, CUT. & PUNCH.NEC	67	30	23	35	20	5	3	1.9
782	HAND SEWERS, MENDERS, EMBROIDERS & KNITTERS, & REL. OCCUPS. NEC	14	7	7	22	15	1	1	0.6
786	SEWING MACHINE OPERATORS, GARMENT	65	28	27	9	1	2	0	7.2
787	SEWING MACHINE OPERATORS, NONGAR.	195	90	88	78	49	17	16	2.5
789.687.070	GARMENT INSPECTOR	25	6	6	9	4	2	0	2.8
804.281.010	SHEET METAL WORKERS	14	3	0	3	0	1	1	4.7

See footnotes at end of table

(Continued on next page)

DOT CODE I	OCCUPATION OR OCCUPATIONAL GROUPING II	REGISTERED APPLICANTS			NONAGRICULTURAL JOB OPENINGS				Ratio of Unfilled Jobs to Total Jobs X
		TOTAL REGISTERED (12 MOS.) III	ACTIVE SEPT. 30, 1979		TOTAL RECEIVED (12 MOS.) VI	TOTAL FILLED VII	UNFILLED 30 DAYS OR MORE		
			TOTAL IV	FEMALE V			TOTAL VIII	IX	
210.382.014	BOOKKEEPER I	46	16	15	19	6	1	0	2.4
211.462.010	CASHIER II	47	18	18	11	3	1	1	4.3
213.362.010	COMPUTER OPERATOR	27	7	4	9	1	1	0	3.0
216.482.010	ACCOUNTING CLERK	69	29	23	48	10	4	0	1.4
219.362.010	ADMINISTRATIVE CLERK	99	29	27	35	7	1	0	2.8
222.387.050	SHIPPING AND RECEIVING CLERK	96	49	3	31	14	1	0	3.1
222.387.058	STOCK CLERK	44	14	5	604	522	2	1	0.1
235.662.022	TELEPHONE OPERATORS	50	9	9	19	2	0	0	2.6
237.367.038	RECEPTIONIST	64	29	29	28	12	2	0	2.3
261	SALES, TEXTILE PROD., APPAREL, NOT.	74	21	17	49	15	11	6	1.5
279.357.054	SALESPERSON, GENERAL MERCHANDISE	60	24	17	42	26	2	1	1.4
290.477.014	SALES CLERK	24	10	8	19	5	1	0	1.3
290.477.018	SALES CLERK, FOOD	52	23	6	9	2	1	1	5.8
299.357.014	TELEPHONE SOLICITOR	57	29	10	40	20	2	1	1.4
301	HOUSEHOLD AND RELATED WORK	29	14	14	14	8	1	0	2.1
311	WAITERS/WAITRESSES & COUNTER ATTEND.	181	65	62	110	63	22	15	1.6
312.474.010	BARTENDERS	58	16	9	9	3	5	2	6.4
313.361.014	COOK (HOTEL & RESTAURANT)	29	6	3	32	14	7	6	0.9
313.361.022	COOK, SHORT ORDER I	37	11	3	16	7	6	2	2.3
316	MEATCUTTERS, EXC. SLAUG. & PACK. HOUSE	38	20	6	11	0	0	0	3.5
318	KITCHEN WORKERS, NEC	160	45	18	67	33	8	4	2.4
323.687.014	CLEANER, HOUSEKEEPING	67	22	15	41	27	2	1	1.6
332	HAIRDRESSERS & COSMETOLOGISTS	28	16	15	1	1	0	0	28.0
355	ATTENDANTS, HOSP., MORGUES, & REL.	327	138	123	323	304	4	3	1.0
361.687.018	LAUNDRY LABORER	19	5	3	16	10	0	0	1.2
363	PRESSERS, LAUNDRY	45	19	14	14	5	4	3	3.2
372.667.034	GUARD, SECURITY	76	30	1	40	15	10	7	1.9
381	PORTERS AND CLEANERS	253	94	31	238	147	24	15	1.1
382	JANITORS	34	9	1	38	11	9	6	0.9
406	GARDENING & GROUNDSKEEPING	48	13	0	27	14	2	2	1.8

See footnotes at end of table

(Continued on next page)

DOT CODE I	OCCUPATION OR OCCUPATIONAL GROUPING II	REGISTERED APPLICANTS			NONAGRICULTURAL JOB OPENINGS				RATIO OF CO. III : IV 1/ X
		TOTAL REGISTERED (12 MOS.) III	ACTIVE SEPT. 30, 1979		TOTAL RECEIVED (12 MOS.) VI	TOTAL FILLED VII	UNFILLED		
			TOTAL IV	FEMALE V			TOTAL VIII	30 DAYS OR MORE IX	
807.381.010	AUTOMOBILE-BODY REPAIRER	15	6	0	10	4	2	2	1.5
810.384.014	WELDER, ARC	84	23	0	45	63	5	3	1.9
819	WELDERS, CUTTERS & REL., NEC	40	10	1	43	31	5	4	0.9
824.261.010	ELECTRICIANS	43	14	1	17	6	5	5	2.5
828.281.010	ELECTRONICS MECHANICS	28	6	0	7	3	0	0	4.0
840.381.010	PAINTERS (CONSTRUCTION)	68	15	1	19	10	2	2	3.6
844.364.010	CEMENT MASONS	13	4	0	4	1	1	1	3.3
860	CARPENTERS AND RELATED	95	17	0	58	38	10	4	1.6
861	BRICK & STONE MASONS & TILE SETTERS	26	7	0	7	7	0	0	3.7
862	PLUMBERS AND RELATED	32	14	0	10	1	3	0	3.2
866.381.010	ROOFERS	31	4	0	16	8	2	2	1.9
869.664.014	CONSTRUCTION WORKER I	169	45	0	357	285	31	28	0.5
869.687.026	CONSTRUCTION WORKER II	126	29	1	57	48	6	4	2.2
899.381.010	MAINTENANCE REPAIRER, BUILDING	59	22	1	33	5	4	4	1.8
904	TRAILOR-TRUCK DRIVERS	75	21	1	23	7	3	1	3.3
905	TRUCK DRIVERS, HEAVY	216	77	0	34	14	2	0	6.4
906	TRUCK DRIVERS, LIGHT	68	21	1	56	23	1	0	1.2
920.587.018	PACKAGER, HAND	437	167	143	52	38	0	0	8.4
920.685.078	PACKAGER, MACHINE	80	38	30	8	8	0	0	10.0
921.683.050	INDUSTRIAL TRUCK OPERATORS	112	32	2	26	15	0	0	4.3
922.687.058	LABORERS, STORES	78	19	4	43	31	2	0	1.8
929.687.030	MATERIAL HANDLERS	514	188	19	282	196	10	3	1.8
939	EXTRACTION OF MINERALS, NEC	35	2	0	3	3	0	0	11.7

1/ Ratio of applicants to openings. Values above 1.00 indicates more applicants than openings.

SOURCE: Employment Security Automated Reporting System (ESARS)

NOTE: Data is for registered applicants and job openings received in the local offices of the Pennsylvania Office of Employment Security.

WILLIAMSPORT STANDARD METROPOLITAN STATISTICAL AREA (SMSA)
TOTAL RESIDENT EMPLOYMENT BY BROAD OCCUPATIONAL AND INDUSTRY CATEGORIES
From 1974 to projected 1985

<u>Occupational Employment</u>				<u>Industry Employment</u>			
	1974	1985	Percent Change		1974	1985	Percent Change
Total, All Occupations	50,833	56,896	+11.9	Total, All Industries	50,833	56,896	+11.9
Professional and Technical Workers	6,358	7,064	+11.1	Agric., Forestry, and Fisheries	1,468	1,360	-7.4
Managers, Officials, Non-farm Proprietors	4,816	5,569	+15.6	Mining	155	153	-1.3
Sales Workers	3,052	3,563	+16.7	Construction	2,918	3,295	+12.9
Clerical Workers	7,549	9,250	+22.5	Manufacturing	19,687	20,619	+4.7
Crafts and Kindred Workers	7,541	8,320	+10.3	Transp., Comm., and Utilities	2,352	2,575	+9.5
Operatives	12,280	13,132	+6.9	Trade	9,430	10,881	+15.4
Service Workers	5,435	6,456	+18.8	Finance, Insurance and Real Estate	2,116	2,658	+25.6
Laborers, Except Farm	2,527	2,520	-0.3	Service Industries	11,214	13,587	+21.2
Farmers and Farm Workers	1,275	1,022	-19.8	Public Administration	1,493	1,768	+18.4

APPENDIX B

VEMIS CODES

<u>O.E. CODE</u>	<u>VEMIS CODE</u>	<u>INSTRUCTIONAL TITLE</u> <u>TRADE</u> <u>AND INDUSTRIAL EDUCATION</u>	<u>CERTIFICATE</u> <u>CODE</u>
17.0100	001	Air Conditioning	2001
17.0401	012	Aircraft Maintenance	2503
17.040102	---	Aircraft Engine Mechanic	2504
17.040101	---	Airframe	2502
17.0200	005	Appliance Repair	2003
17.0301	008	Automotive Body & Fender	2005
17.0302	009	Automotive Mechanic	2007
17.0303	010	Automotive Specialist	2028
17.0390	---	Auto - Diesel Mechanic	---
17.2901	196	Baker	2009
17.1090	037	Building Construction <u>Occupations</u>	2014
17.1091	039	Building Trades Maintenance	2013
17.0600	017	Business Machine Maint./Rpr.	2015
17.1001	027	Carpentry	2017
17.0700	021	Commercial Art	2019
17.0900	026	Commercial Photography	2020
17.2602	085	Cosmetology	2023
17.1100	040	Custodial Services	2520
17.1200	041	Diesel Mechanic	2025
17.1300	042	Drafting	2027
17.1301	142	Drafting, Architectural	2032
17.1302	144	Drafting, Mechanical	2034
17.3301	102	Dressmaking	2029
17.1002	028	Electrical Construc/Maintenance	2031
17.1401	043	Electrical Industrial	2035
17.1400	047	Electrical <u>Occupations</u>	2033
17.1500	051	Electronics	2030
17.1501	048	Electronics Communication	2110
17.1600	052	Fabric Maintenance Services	2037
17.1094	---	Floor Covering Installation	---
17.2301	070	Foundry	2039
17.1900	062	Graphic Arts	2057
17.1907	126	Graphic <u>Occupations</u>	---
17.0102	002	Heating	2040
17.1003	029	Heavy Equipment - Construction	2044
17.3290	100	Hydraulics/Fluid Power	2042
17.2100	---	Instrument Maintenance & Repair	2041
17.1092	020	Industrial Maintenance Mech.	2068
17.0701	018	Interior Decorating	---
17.2802	089	Law Enforcement Training	2048
17.2302	071	Machine Shop Practice	2043
17.2303	072	Machine Tool Operation	---
17.1004	030	Masonry	2045

VERMIS CODES (continued)

<u>O.E. CODE</u>	<u>VERMIS CODE</u>	<u>INSTRUCTIONAL TITLE</u> <u>TRADE</u> <u>AND INDUSTRIAL EDUCATION</u>	<u>CERTIFICATE</u> <u>CODE</u>
17.1093	069	Masonry Occupations	2054
17.9905	116	Material Handling	2046
17.2903	160	Meat Cutter	2058
17.2392	081	Metal Fabrication	2052
17.2300	181	Metal Occupations	---
17.3601	110	Millwork & Cabinetmaking	2047
17.2391	080	Mine Equipment Maintenance	2530
17.2103	117	Optics	2116
17.1005	031	Painting and Decorating	2049
17.9903	114	Patternmaking	2051
17.2700	087	Plastics	2053
17.1007	033	Plumbing	2055
17.0304	006	Power Mechanics Occupations	---
17.3390	104	Power Sewing	2070
17.1503	050	Radio/Television Repair	2061
17.3000	096	Refrigeration	---
17.9901	112	School - Employment Coop. Ed.	---
17.2305	074	Sheet Metal	2063
17.3401	106	Shoe Manufacutre/Repair	2065
17.3100	097	Small Engine Repair	2067
17.3302	103	Tailoring	2069
17.3300	105	Textile Production/Fabrication	2071
17.2307	076	Tool and Die Making	2073
17.3500	109	Upholstering	2075
17.9904	119	Vending Machine Repair	---
17.2306	075	Welding	2079
17.9999	199	Trade/Industrial, Other	---

OCCUPATIONAL DESCRIPTIONNURSING ASSISTANT

Nursing assistants are individuals prepared to perform tasks relating to nursing services. They work under the supervision and direction of a licensed professional nurse or licensed practical nurse. They may answer patient's calls, help with meals and bathing, adjust beds, straighten rooms or undertake any one of a number of other tasks which are very important to the patient's comfort and care. Nursing assistants may be employed in hospitals, nursing homes or other nursing service areas.

MEDICAL ASSISTANT

Medical assistants are individuals prepared to assist licensed physicians in their overall office practice. In addition to assisting with physical examinations and performing simple laboratory and x-ray procedures, the medical assistant may make appointments, complete insurance forms, collect fees, type business letters and assist in keeping medical records. Medical assistants work under the supervision of licensed physicians.

DENTAL ASSISTANT

Dental assistants are individuals prepared to assist the licensed dentist in private offices, group practice, dental clinics, or federal agencies. Certain laboratory duties may be performed, and in some offices the assistant may work as receptionist and secretary.

The ABC Vo-Tech program emphasis is on Nursing Assistants training. Qualified entry level employees can be trained in this area. The Medical Assistant and Dental Assistant areas are covered as specialists for introductory career awareness. Further training beyond high school is normally required for employment in these areas.

O.E.	Code	070101	
D.O.T.	Code	079, 378-010	DENTAL ASSISTANT
O.E.	Code	07.0904	
D.O.T.	Code	079368-022	MEDICAL ASSISTANT
O.E.	Code	07.0303	
D.O.T.	Code	355.878-034	NURSING ASSISTANT

TITLE OF COURSE: ELECTRONIC TECHNOLOGY

DATE:

OCCUPATIONAL DESCRIPTION

The technological aspects of this course of instruction shall teach, by direct application or hands on situations, the use and application of present and future electronic circuits, as its availability, and test equipment pertaining to the job field of an Electronic Technician.

The Electronic Technician assembles, modifies, tests, and adjusts electronic parts, systems and apparatus, applying knowledge of various assembly and schematic drawings. The Technician aligns and joins parts such as leads, coils, wires, tabs and terminals, using hand tools and power tools; installs components and parts such as switches, coils, transformers, relays, transistors, and semiconductor circuits on chassis, circuit boards, and panels.

They test operate units for specified functioning, to locate defects, measure performance, and determine need for adjustment, making use of the following equipment such as: ohmmeter, voltmeter, ammeter, oscilloscope, signal generator, impedance bridge, Wheatstone bridge, dip meter, capacitator tester, transistor tester, and other electronic test equipment.

The Electronic Technician replaces defective components and wiring, calibrates unit to specification, enters required information to complete records, logs and other report forms.

DICTIONARY OF OCCUPATIONAL TITLES

D.O.T. CODE NUMBERS	D.O.T. TITLES
Electronic Tester I	726.684-026
Electronic Tester II	726.281-014
Electronic Assembler	726.261-010
Electronic Assembler	726-684-018
Electronic Utility Worker	726-361-010

APPENDIX D

BERKS VOCATIONAL-TECHNICAL SCHOOL

PHILOSOPHY

The goal of American public education is education for all. Our total educational program must, therefore, be broad enough to encompass various needs of individual students and the changing requirements of an open society. By supplementing the general education program offered by high schools, the area vocational-technical school has a role to play in this primary aim.

The dignity of work is basic to the perpetuation of the American way of life. Area vocational-technical schools strengthen this principle by offering American youth the opportunity to prepare for work. Moreover, we share with local high schools the aim of inculcating those principles and ideals which enable youth to become useful, productive citizens.

The curriculum of the area vocational-technical school must be broadly organized to serve students of varying abilities at the technical, skilled, and operative levels. A continuous evaluation of the curriculum is mandatory if the school is to provide workers in a rapidly-changing technology and economy. Because of the mobility of the population, the curriculum must reflect the requirements of the larger community and not be limited to wholly local needs.

We believe that close cooperation must exist between the guidance departments of the sending high schools and the vocational-technical school. The needs, desires, and abilities of students must be reliably determined so that intelligent decisions which affect their future can be made.

We believe that our changing technology requires the development of new skills and positive attitudes with respect to the need of a program of continuing education for all individuals of our society. Therefore, it is important that vocational education opportunities be provided for out-of-school youth and adults.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	High school diploma	Technical school diploma	Junior college	College degree	Job experience	2000-2001 scale 100	Working with 11-13	Working with 14-15	Working with 16-17	Working with 18-19	Working with 20-21	Working with 22-23	Working with 24-25	Working with 26-27	Working with 28-29	Working with 30-31	Working with 32-33	Working with 34-35	Working with 36-37	Working with 38-39	Working with 40-41	Working with 42-43	Working with 44-45	Working with 46-47	Working with 48-49
INDUSTRIAL PRODUCTION AND RELATED OCCUPATIONS																									
Foundry occupations																									
Patternmakers	X	X		X	X					X	X	X	X	X									X		
Molders	X		X	X	X					X	X	X	X	X								X			
Coremakers	X		X	X	X					X	X	X	X	X								X			
Machining occupations																									
All-round machinists	X	X		X	X					X	X	X	X	X							X	X	X		
Instrument makers (mechanical)	X	X		X	X					X	X	X	X	X								X			
Machine tool operators	X	X		X	X					X	X	X	X	X							X	X	X		
Set-up workers (machine tools)	X	X		X	X					X	X	X	X	X							X	X			
Tool-and-die makers	X			X	X					X	X	X	X	X							X	X			
Printing occupations																									
Bookbinders	X	X		X	X					X	X	X	X	X									X		
Composing room workers	X	X		X	X					X	X	X	X	X								X	X		
Electrotypers and stereotypers	X	X		X	X					X	X	X	X	X								X	X		
Lithographic workers	X	X		X	X					X	X	X	X	X								X	X		
Photoengravers	X	X		X	X					X	X	X	X	X								X	X		
Printing press operators and assistants	X	X		X	X					X							X		X						
Other industrial and related occupations																									
Assemblers				X	X						X	X	X	X									X		
Automobile painters	X		X	X	X					X	X	X	X	X									X		
Automobile trimmers and installers				X	X					X	X	X	X	X									X		
Blacksmiths	X		X	X	X					X	X	X	X	X							X				
Blue-collar-worker supervisors	X		X							X		X	X	X	X	X	X	X							

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	High school diploma	Technical school diploma	College diploma	College diploma	College diploma	College diploma	College diploma	College diploma	College diploma	College diploma	College diploma	College diploma	College diploma	College diploma	College diploma	College diploma	College diploma	College diploma	College diploma	College diploma	College diploma	College diploma	College diploma	College diploma	College diploma
Other industrial and related occupations																									
Boilermakers		X			X		X				X		X						X		X	X			
Electroplaters		X			X		X				X		X			X							X		
Forge shop workers					X		X				X		X		X	X				X		X			
Furnace tenders					X		X						X				X								
Furniture upholsterers		X			X		X				X		X			X							X		
Inspectors (manufacturing)						X	X					X	X	X		X	X					X	X		
Millwrights		X			X		X				X		X		X					X	X				
Motion picture projectionists		X			X		X						X			X	X						X		
Photographic laboratory workers					X		X				X		X			X						X	X		
Power truck operators					X		X					X		X									X		
Production painters					X		X					X		X		X							X		
Stationary engineers		X	X		X		X						X				X					X			
Waste water treatment plant operators					X		X						X				X	X		X	X				
Welders and oxygen arc cutters					X		X			X		X		X		X			X						
OFFICE OCCUPATIONS																									
Clerical occupations																									
Bookkeeping workers		X			X							X		X		X						X	X		
Cashiers					X				X				X	X		X						X	X		
File clerks		X			X		X					X		X								X	X		
Hotel front office clerks		X			X			X	X				X			X	X				X				
Office machine operators		X			X		X					X		X		X						X	X		
Postal clerks					X		X					X				X	X			X		X			
Receptionists		X			X			X	X				X			X									
Shipping and receiving clerks					X		X					X		X		X				X		X			

* See footnote at end of table

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Administrative and related occupations																									
Industrial traffic managers				C	X			X						X		X				X		X			
Lawyers				G	X			X	X			X		X				X		X		X		X	X
Marketing research workers				C		X	X					X										X			X
Personnel workers				C	X				X	X		X				X			X		X				
Public relations workers				C		X	X				X	X					X				X		X	X	X
Purchasing agents				C	X			X						X		X				X		X		X	X
SERVICE OCCUPATIONS																									
Cleaning and related occupations																									
Building custodians					X		X							X	X						X				
Hotel housekeepers and assistants					X			X						X		X						X			
Pest controllers	X				X		X							X					X		X				
Food service occupations																									
Bartenders					X				X	X				X				X	X						
Cooks and chefs		X			X		X	X					X			X		X							
Meatcutters		X			X		X							X			X				X		X		
Waiters and waitresses					X				X	X			X					X			X				
Personal service occupations																									
Barbers		X			X				X	X	X						X						X		
Bellhops and bell captains					X				X	X				X				X			X				
Cosmetologists		X			X				X	X	X						X								
Funeral directors		X			X				X	X				X		X		X							
Private household service occupations																									
Private household workers					X		X	X						X	X						X				

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Protective and related service occupations																									
FBI special agents				G	X			X	X			X						X		X	X	X			
Firefighters	X			X	X	X		X			X							X	X		X				
Guards				X									X					X		X	X				
Police officers	X			X				X	X				X	X				X	X	X	X	X			
State police officers	X			X				X	X				X	X				X	X	X	X	X			
Health and regulatory inspectors (Government)				C	X		X						X							X	X	X	X		
Construction inspectors (Government)	X	X		X		X							X						X	X	X	X			
Other service occupations																									
Mail carriers				X	X	X							X						X		X				
Telephone operators	X			X	X	X							X					X	X						
EDUCATION AND RELATED OCCUPATIONS																									
Teaching occupations																									
Kindergarten and elementary school teachers				C	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		
Secondary school teachers				C	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X			
College and university teachers				G	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X			
Library occupations																									
Librarians				G	X		X						X					X				X			
Library technicians				X	X		X					X						X				X			
SALES OCCUPATIONS																									
Automobile parts counter workers				X	X	X	X	X					X												
Automobile salesworkers	X			X		X	X	X					X					X				X	X	X	
Automobile service advisers	X			X		X	X	X				X													
Gasoline service station attendants				X	X	X							X					X		X					
Insurance agents and brokers	X			X		X	X	X					X					X			X	X	X		

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	High school diploma	Technical school diploma	College diploma	College degree	Postsecondary certificate	Postsecondary diploma	Postsecondary certificate	Postsecondary diploma	Postsecondary certificate	Postsecondary diploma	Postsecondary certificate	Postsecondary diploma	Postsecondary certificate	Postsecondary diploma	Postsecondary certificate	Postsecondary diploma	Postsecondary certificate	Postsecondary diploma	Postsecondary certificate	Postsecondary diploma	Postsecondary certificate	Postsecondary diploma	Postsecondary certificate	Postsecondary diploma	Postsecondary certificate
Manufacturers' salesworkers				C X				X X					X					X		X		X	X		
Models	X				X				X		X							X		X					X
Real estate salesworkers and brokers	X			X				X X					X					X		X		X	X		
Retail trade salesworkers				X				X X				X						X					X X		
Route workers				X				X X				X						X X		X			X		
Securities salesworkers				C X				X X X					X					X		X			X X		
Wholesale trade salesworkers	X			X				X X					X					X				X	X X		
CONSTRUCTION OCCUPATIONS																									
Asbestos and insulating workers	X			X	X				X		X							X			X	X			
Bricklayers	X			X	X				X	X								X		X					
Carpenters	X			X	X				X	X								X		X					
Cement masons (cement and concrete finishers)	X			X	X				X	X				X				X X		X					
Construction laborers and carpenter's helpers				X	X						X	X						X X		X	X				
Electricians (construction)	X			X	X				X	X								X		X					
Elevator constructors				X	X				X	X										X					
Floor covering installers	X			X	X				X		X									X					
Glaziers	X X			X	X				X		X							X		X					
Lathers	X			X	X						X									X					
Marble setters, tile setters, and terrazzo workers				X	X				X		X							X		X					
Operating engineers (construction machinery operators)	X X			X	X				X		X							X X		X					
Painters and paperhangers	X			X	X				X		X									X					
Plasterers	X			X	X				X	X										X					
Plumbers and pipefitters	X			X	X				X		X									X					
Roofers	X			X	X				X		X							X		X					

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Sheet-metal workers	X	X		X	X					X	X						X			X					
Stonemasons	X			X	X					X		X						X	X						
Structural, ornamental, and reinforcing-iron workers, riggers, and machine movers	X			X	X					X	X							X	X						
OCCUPATIONS IN TRANSPORTATION ACTIVITIES																									
Air transportation occupations																									
Air traffic controllers	X				X	X						X			X	X	X		X	X					
Aircraft mechanics	X	X			X	X						X							X	X	X				
Flight attendants	X				X			X	X			X						X			X				
Airline dispatchers				C	X	X						X			X	X	X		X	X	X				
Flight engineers	X				X	X						X			X	X	X		X	X	X				
Ground radio operators and teletypists	X				X	X	X					X					X		X	X	X				
Pilots and copilots	X				X	X						X			X	X	X		X	X	X				
Traffic agents and clerks	X				X			X	X				X				X	X							
Merchant marine occupations																									
Merchant marine officers				C	X	X						X			X	X	X		X	X					
Merchant marine sailors					X	X						X	X				X	X			X				
Railroad occupations																									
Brake operators and couplers					X	X						X						X	X		X	X	X		
Bridge and building workers					X	X				X	X	X						X		X					
Clerks	X				X							X	X	X								X	X		
Conductors					X			X	X						X	X			X	X		X			
Locomotive engineers	X				X	X							X	X	X	X	X	X	X	X	X	X			
Locomotive firemen (helpers)	X				X	X							X	X			X	X		X	X	X			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Railroad occupations																									
Shop trades workers		X		X	X							X	X					X							
Signal department workers				X	X							X						X	X						
Station agents				X				X	X				X				X	X					X		
Telegraphers, telephoners, and tower workers				X	X							X	X				X	X							
Track workers				X	X					X		X	X					X	X						
Driving occupations																									
Intercity busdrivers				X	X	X							X				X	X	X						
Local transit busdrivers				X	X	X							X				X	X	X						
Local truckdrivers				X	X								X				X	X	X		X				
Long-distance truckdrivers				X	X								X				X	X	X		X				
Parking attendants				X	X	X							X				X	X	X		X				
Taxi drivers					X	X	X						X				X	X	X						X
SCIENTIFIC AND TECHNICAL OCCUPATIONS																									
Conservation occupations																									
Foresters				C	X	X							X	X			X	X	X	X					
Forestry aides and technicians			X	X	X							X						X	X		X				
Range managers				C	X		X						X					X		X					
Soil conservationists				C	X		X					X	X					X		X	X				
Engineers																									
Aerospace				C	X	X				X	X	X			X				X		X				
Agricultural				C	X	X				X	X	X			X						X				
Biomedical				C	X	X				X	X	X			X						X				
Ceramic				C	X	X				X	X	X			X						X				
Chemical				C	X	X				X	X	X			X						X				
Civil				C	X		X			X	X	X			X				X		X				

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	High school diploma	Technical school or apprenticeship	Junior college	College degree	Advanced degree	100% on-the-job training	Work as an apprentice	Work as an apprentice	Work as an apprentice	Work as an apprentice	Work as an apprentice	Work as an apprentice	Work as an apprentice	Work as an apprentice	Work as an apprentice	Work as an apprentice	Work as an apprentice	Work as an apprentice	Work as an apprentice	Work as an apprentice	Work as an apprentice	Work as an apprentice	Work as an apprentice	Work as an apprentice	Work as an apprentice
Engineers																									
Electrical				C	X			X			X	X	X			X						X			
Industrial				C	X			X				X	X			X			X		X	X		X	
Mechanical				C	X			X			X	X	X			X					X				
Metallurgical				C	X			X			X	X	X			X					X				
Mining				C	X			X			X	X	X			X			X	X	X				
Environmental scientists																									
Geologists				G	X			X			X	X									X				
Geophysicists				C	X			X			X	X									X				
Meteorologists				C	X			X			X	X						X			X				
Oceanographers				C	X			X			X	X				X		X			X				
Life scientists																									
Biochemists				C	X			X			X										X				
Life scientists				G	X			X			X	X									X				
Soil scientists				C	X			X			X	X									X				
Mathematics occupations																									
Mathematicians				C	X			X			X	X				X					X				
Statisticians				C	X			X			X	X				X					X				
Physical scientists																									
Astronomers				C	X			X			X	X													
Chemists				C	X			X			X	X													
Food scientists				C	X			X			X	X													
Physicists				C	X			X			X	X													
Technicians																									
Broadcast technicians	X				X	X						X			X	X	X	X	X	X	X				

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Technicians																									
Drafters (draftsmen)			X	X			X						X	X	X							X			
Engineering and science technicians			X	X	X								X	X								X			
Food processing technicians			X	X	X								X	X								X			
Surveyors	X	2	2	X			X						X		X			X				X			
MECHANICS AND REPAIRERS																									
Telephone craft occupations					X	X								X											
Central office craft occupations	X			X	X					X			X		X	X						X	X		
Line installers and cable spicers	X			X	X								X	X			X	X	X	X	X	X			
Telephone installers and repairers	X			X	X								X				X	X	X	X	X	X			
Other mechanics and repairers																									
Air-conditioning, refrigeration, and heating mechanics				X	X					X			X				X								
Appliance repairers				X	X								X							X					
Automobile body repairers	X		X	X	X					X			X		X						X				
Automobile mechanics	X		X	X	X					X			X		X						X				
Boat-motor mechanics				X	X					X			X					X							
Bowling-pin-machine mechanics				X	X								X				X				X	X			
Business machine repairers	X	X		X	X								X									X			
Computer service technicians				X	X								X												
Diesel mechanics		X		X	X					X			X		X						X				
Dispensing opticians and optical technicians	X	X		X	X	X	X	X	X	X			X									X			
Electric sign repairers				X	X					X			X				X	X	X	X	X				
Farm equipment mechanics		X		X	X					X			X				X	X	X	X					
Industrial machinery repairers	X	X		X	X								X				X			X	X				
Instrument repairers	X	X		X	X								X		X						X				

* See footnotes at end of table.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	1961-1962	1962-1963	1963-1964	1964-1965	1965-1966	1966-1967	1967-1968	1968-1969	1969-1970	1970-1971	1971-1972	1972-1973	1973-1974	1974-1975	1975-1976	1976-1977	1977-1978	1978-1979	1979-1980	1980-1981	1981-1982	1982-1983	1983-1984	1984-1985	1985-1986
Other mechanics and repairers																									
Jewelers and jewelry repairers		X			X		X							X			X					X			
Locksmiths				X		X								X								X			
Maintenance electricians		X			X		X							X											
Motorcycle mechanics					X		X				X			X											
Piano and organ tuners and repairers	X					X	X							X											
Shoe repairers				X		X				X			X				X				X		X		
Television and radio service technicians		X			X		X		X		X			X								X			
Truck and bus mechanics		X			X		X							X							X				
Vending machine mechanics						X	X			X		X	X				X				X	X			
Watch repairers		X			X		X			X		X	X				X					X			
HEALTH OCCUPATIONS																									
Dental occupations																									
Dentists				G	X				X	X	X	X		X					X			X			
Dental assistants			X		X				X	X			X	X	X		X						X		
Dental hygienists			X		X				X	X				X			X						X		
Dental laboratory technicians	X	X				X				X		X	X	X	X		X					X	X		
Medical practitioners																									
Chiropractors				C	X				X	X	X	X		X					X		X				
Optometrists				G	X				X	X	X	X		X				X		X	X				
Osteopathic physicians				G	X				X	X	X	X		X				X		X	X				
Physicians				G	X				X	X	X	X		X				X		X	X				
Podiatrists				G	X					X	X	X		X					X		X				
Veterinarians				G	X					X	X	X		X				X	X	X	X		X		

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	High School diploma	Technical diploma or certificate	Associate degree	College degree	Postgraduate degree	Master's degree	PhD	Professional certification	Work experience	Work experience	Work experience	Work experience	Work experience	Work experience	Work experience	Work experience	Work experience	Work experience	Work experience	Work experience	Work experience	Work experience	Work experience	Work experience	Work experience
Medical technicians, technologists, and assistants occupations																									
Electrocardiograph technicians			X	X				X	X				X	X								X	X		
Electroencephalograph technicians			X	X				X	X				X	X								X	X		
Medical assistants			X	X				X	X				X	X			X					X			
Medical laboratory workers	X	3	3	X	X	X							X	X			X	X		X	X				
Medical record technicians and clerks				C	X	X							X									X	X		
Operating room technicians	X			X				X	X				X	X								X			
Optometric assistants	X			X				X	X				X	X								X			
Radiologic (X-ray) technologists				C	X	X	X	X					X	X			X	X	X	X	X				
Respiratory therapists	X			X				X	X				X	X			X					X			
Nursing occupations																									
Registered nurses	X	4	4	X				X	X				X	X	X	X	X	X	X	X	X				
Licensed practical nurses		5	5	X				X	X				X	X			X					X			
Nursing aides, orderlies, and attendants				X				X	X				X	X			X								
Therapy and rehabilitation occupations																									
Occupational therapists				C	X			X	X	X	X	X	X	X								X			
Occupational therapy assistants	X			X				X	X	X	X	X	X	X											
Physical therapists				G	X			X	X	X	X	X	X	X						X	X				
Physical therapy assistants		5	5	X				X	X	X	X	X	X	X											
Speech pathologists and audiologists				G	X			X	X	X	X	X	X	X					X	X					
Other health occupations																									
Dietitians				C	X			X	X				X	X								X			
Hospital administrators				G	X			X					X	X	X	X	X	X	X	X	X	X	X		
Medical record administrators				C	X	X							X									X	X		

* See footnotes at end of table

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Other health occupations																									
Pharmacists				G X	X	X		X					X				X		X	X	X				
Sanitarians				C X		X							X									X			
SOCIAL SCIENTISTS																									
Anthropologists				G X			X			X	X											X			
Economists				C X			X			X	X											X			
Geographers				C X			X			X	X											X			
Historians				G X			X			X	X											X			
Political scientists				C X			X			X	X											X			
Sociologists				G X			X			X	X											X			
SOCIAL SERVICE OCCUPATIONS																									
Counselors																									
School counselors				C X				X X		X		X		X					X						
Employment counselors				C X				X X X		X		X	X	X									X		
Rehabilitation counselors				C X				X X		X	X		X	X					X				X		
College career planning and placement counselors				C X				X X		X	X		X	X									X		
Clergy																									
Protestant ministers				G X				X X		X	X		X	X									X		
Rabbis				G X				X X		X	X		X	X									X		
Roman Catholic priests				G X				X X		X	X		X	X									X		
Other social service occupations																									
Cooperative extension service workers				C X				X X						X									X		
Home economists				C X				X X	X	X	X		X	X									X		
Psychologists				G X			X X		X	X								X	X	X	X				
Recreation workers				C X			X X			X	X	X	X	X			X	X	X	X		X			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Other social service occupations																									
Social service aides					X			X	X			X	X		X		X								
Social workers			C	X				X	X			X	X		X				X				X		
ART, DESIGN, AND COMMUNICATIONS-RELATED OCCUPATIONS																									
Performing arts																									
Actors and actresses		X		X	X			X			X	X					X								X
Dancers		X		X	X			X			X	X					X								X
Musicians			C	6	X		X	6			X	X					X								X
Singers			C	6	X		X	6			X	X													X
Design occupations																									
Architects		X	C	X				X	X		X	X		X	X				X	X					X
Commercial artists			X		X	X		X			X	X	X	X		X					X	X			X
Display workers	X			X			X				X	X	X												
Floral designers				X	X						X	X	X		X										
Industrial designers			C		X	X		X	X	X															
Interior designers			X		X	X	X	X	X	X	X	X	X	X							X				X
Landscape architects				C	X			X	X	X	X	X	X	X							X				X
Photographers	X	X		X			X				X	X	X								X				X
Urban planners				G	X	X	X				X	X		X					X	X	X				X
Communications-related occupations																									
Interpreters			C	X	X	X		X			X						X								
Newspaper reporters			C	X			X	X	X	X	X					X	X	X	X						X
Radio and television announcers	X			X			X						X		X	X							X	X	
Technical writers			C	X			X			X	X								X	X					

1 Requirements vary according to type of industry

2 Postsecondary schooling required, usually in junior college, technical school, or vocational school

3 Educational requirements vary according to area of work. See Occupational Outlook Handbook for details.

4 Type of training program depends on individual preference

5 Training programs are available from vocational schools or junior college

6 Teachers only

V-TECS COMPUTER PRINTOUTS
(Duty/Task Lists)
AND COMPLETED CATALOGS*

APPENDIX F

* Advertising Artist	# _____	Electrician, Residential
* Agricultural Chemical Salesman	+ _____	* Electronic Technician (Mechanic)
* Agricultural Equipment Partsman	_____	Environmental Servicer (Heating & A.C.)
* Alterationist, Clothing	_____	* Executive Secretary
* Appliance Repairer	_____	* Farm Equipment Operator
Audio Visual Repairer	_____	Farm Management
* Auto Body Repairer	_____	Fire Fighter
* Auto Mechanic	_____	* Floral Salesperson/Designer (Retail)
* Auto Parts Salesperson	_____	* Floriculture Worker
Baker and Pastry Cook	# _____	Food Sales Clerk
* Bank Teller	_____	* Food Services (Cook)
* Banking Clerk	_____	* Gardening/Groundskeeper
* Bookkeeping/Accounting/Payroll Clerk	_____	General House Worker (Domestic Service)
Building Maintenance	# _____	Grower, Cash Grain/Tobacco
Business Machine Repairer	# _____	Grower, Vegetable/Orchardist
Cabinetmaker	_____	* Health Care Worker, Community
* Carpentry	_____	* Heavy Equipment Mechanic
* Cashier/Checker	# _____	Hardware Salesperson
* Child Care Attendant	_____	* Home Furnishings Worker (Drapery)
* Computer Operator (Data Processing)	_____	Homemaker
* Cosmetologist	_____	* Hospital Ward Clerk
Dairy Worker (Farmer)	_____	* Hotel/Motel Desk Clerk
Data Entry Occupations	_____	* Housing Manager, Public
* Dental Assistant	_____	Industrial Maintenance Mechanic
Dental Hygienist	_____	* Industrial Sewing Machine Operator
* Dental Laboratory Technician	_____	* Janitor (Custodial Service)
* Die, Jig and Fixture Designer	_____	* Legal Secretary/Court Reporter
* Diesel Mechanic	_____	* Licensed Practical Nurse
Drafter, Architectural	_____	* Machinist
* Dressmaker, Custom	_____	* Masonry (Bricklayer)
* Emergency Medical Technician	_____	* Meatcutter
* Electrician, Industrial	_____	* Medical Assistant

Completed Catalogs as of 3/81

NAME _____

MATERIALS

SCHOOL _____

Task Lists

Catalogs

☐ * Medical Lab Technician
☐ Medical Records Technician
☐ Medical Secretary/Records Clerk
☐ * Nursery Production (Worker)
☐ * Nurses Aide/Orderly
☐ * Patrolman
☐ * Plumber
☐ * Printing Occupations
☐ * Programmer, Computer
☐ Property Manager
☐ Radio Communications Technician
☐ Radiographer (Radiologic Technician)
☐ * Radio/TV Repairer
☐ Real Estate Agent
☐ Refrigeration Mechanic
☐ Respiratory Therapist
☐ * Retail Credit Manager

☐ * Secretary/Steno/Typing
☐ * Security Guard
☐ * Sheet Metal Worker
☐ * Small Engine Repairer
☐ * Solar Heating Mechanic
☐ # Surveying, Land
☐ * Timber Harvesting (Logger)
☐ * Tractor Mechanic
☐ * Turf Maintenance (Greens Keeper)
☐ Veterinary Assistant
☐ # Waiter/Waitress
☐ Warehouse Worker (Materials Handling)
☐ * Water/Waste Water Treatment
☐ * Welding, Combination
☐ * Word Processing, Adm. Support Secretary
☐ * Word Processing Correspondance Specialist
☐ # Drafter, Mechanical

BERKS VOCATIONAL-TECHNICAL SCHOOL

ELECTRONICS

(D.O.T.'s)

COMPETENCIES

	003-111-014	714-261-010	720-281-010	720-281-014	726-684-018	729-281-026	729-281-010	729-281-026	823-281-030	729-281-042	729-684-054	730-281-062	730-281-018
1. Solder & desolder components	X	X	X	X	X	X	X	X	X	X	X		
2. Calibrate VTVM	X	X	X	X	X	X	X	X	X	X	X		
3. Measure AC & DC voltage with VTVM	X	X	X	X	X	X	X	X	X	X	X		
4. Calibrate VOM	X	X	X	X	X	X	X	X	X	X	X		
5. Measure AC & DC voltage with VTVM	X	X	X	X	X	X	X	X	X	X	X		
6. Construct, measure & calculate parameters of a series circuit	X	X	X	X	X	X	X	X	X	X	X		
7. Construct, measure & calculate parameters of a parallel circuit	X	X	X	X	X	X	X	X	X	X	X		
8. Construct, measure & calculate parameters of a combination circ.	X	X	X	X	X	X	X	X	X	X	X		
9. Design, construct & verify voltage divider circuits	X	X	X	X	X	X	X	X	X	X	X		
10. Construct & evaluate bridge circ.	X	X	X	X	X	X	X	X	X	X	X		
11. Design & construct meter circuits	X	X	X	X	X	X	X	X	X	X	X		
12. Verify parameters of non-linear resistive devices	X	X	X	X	X	X	X	X	X	X	X		
13. Trouble shoot DC networks	X	X	X	X	X	X	X	X	X	X	X		
14. Determine maximum power transfer conditions	X	X	X	X	X	X	X	X	X	X	X		

PERFORMANCE OBJECTIVES

PURPOSES OF OBJECTIVES

Objectives provide the basis for all the remaining activities in the development of performance-based instruction. Some of their more important uses are:

- ... Provide the framework upon which to build teaching content. The content of instruction is the collection of knowledges and skills that must be taught. Objectives, therefore, help to structure curriculum.
- ... Provide a basis for the selection of the most effective instructional methods, designs, and media.
- ... Establish clear-cut instructor and student goals. Through objectives, both the instructor and the student know precisely what is required of the student.
- ... Provide basis for criterion-referenced measurement. Because student achievement in observable behavior is specified, objectives dictate the construction of tests designed to measure student achievement.
- ... Provide a basis for validation. Validation is a process used to check the effectiveness of the instruction. Effectiveness is determined by whether the students pass or fail objectives.

CONCEPT OF PERFORMANCE OBJECTIVES

There are three components in a performance objective: the behavior the students are expected to perform, the conditions under which they will perform, and the acceptable standard by which their performance will be evaluated.

1. BEHAVIOR

The first component is the statement of behavior. This is a statement of what students will do while in training to show that they have learned a specific task or knowledge. The statement must be written in measurable, observable terms. This means that the students must do something which can be objectively evaluated. Consider these examples:

- ... Convert English measurements to metric measurements.
- ... Mill internal slots using slotting attachment.

These examples state behaviors which can be observed and measured, and are therefore acceptable as behavior components of performance objectives.

RULES FOR SPECIFYING BEHAVIOR

There are two rules which apply to the specification of behavior:

- ... Use action verbs which communicate measurable, observable performance.
- ... Qualify the behavior when necessary.

USE ACTION VERBS TO COMMUNICATE MEASURABLE, OBSERVABLE PERFORMANCE

In order to understand the importance of specific performance statements, it is helpful to compare statements of educational goals with operational statement of student behavior.

In the past, many have used statements to communicate the intent of a course or program. Even though such statements were sometimes called objectives, actually they were goals expressed in broad, general statements which were not really measurable and observable. For example:

- "The student will understand..."
- "The student will know..."
- "The student will become familiar with..."
- "The student will appreciate..."

Such statements do not communicate measurable, observable student behavior. Although they express in general, abstract terms a desired change of behavior, they do not specify what the student will do to demonstrate that a change in behavior has occurred. For example, if you write "The student will understand will understand the metric system." you merely express the intent of the instruction. A measurable objective must specify what the students will do to prove that the desired change in behavior has been accomplished. How could students demonstrate that they "understand" the metric system? To answer that question, consider the following hypothetical situation.

Imagine that you must teach your students to "understand" the metric system. Hopefully, the instruction will, in fact, teach the students to the degree that they understand it. But how can you describe a student activity or a performance that can be observed and measured—one in which the students can demonstrate that they understand? What can students who understand the metric system do to prove beyond a doubt that they understand it? And how can you prescribe that performance in behavioral terms? If, after your instruction, your students could convert English measurements to metric measurements, you would have proof of their changed behavior.

2. CONDITIONS

In order for each student's behavior to be observed and measured or evaluated, it should occur under constant, controlled conditions. In other words, if there are 30 students in a class, each of them must perform the behavior under controlled conditions. Another component, therefore, must be added to the objective to specify those controlled conditions. Specifications include the tools, equipment, materials, references, or any other special provisions which affect the student's performance when accomplishing the objective.

In the example below, the conditions have been added to the behavior components. For illustrative purposes, conditions are underlined with two lines.

- ... Given blueprints, workpiece, work-holding device, vertical mill with accessories, slotter attachment, slotter cutter or tool, and precision instruments, mill internal slot using slotter attachment.
- ... Provided a pair of slacks with fold-up cuffs and necessary equipment, remove cuff.

TYPES OF CONDITIONS

There are several types of conditions. Those most generally used are:

- Simulated or real-life situation
- Equipment
- Procedural aids
- References
- Unusual environmental conditions

NOTE: Your objectives will contain one or more of these types of conditions.

3. STANDARD

As you have seen, the behavior specifies, in action verbs, exactly what the students will do, and the condition specifies what will be given or denied when they do it. In order to complete the performance objective, we must add a third component - the standard.

In a performance objective, the standard specifies the degree of accuracy or proficiency the students must achieve when they perform the behavior under the specified conditions. Without a standard it is impossible to determine when they have met the objective. To illustrate how standards are added, let's consider the examples already used - this time with standards which are underlined with three lines.

TYPES OF STANDARDS

There are several common types of standards such as degree of accuracy, quality of the finished product, content of finished product, time limits, adjunct standards and those without error.

4. DEGREE OF ACCURACY

For many objectives, the standard can be specified as degree of accuracy. Here are some examples:

- ... to a tolerance of plus or minus 1 degree.
- ... to solve at least 18 of 21 problems correctly.

5. QUALITY OF FINISHED PRODUCT

When the student performance results in a finished product, a description of the finished product can sometimes be the standard. Some examples:

- ... adjustment must produce a meter reading of "0"
- ... the engine must run smoothly at 4500 rpm
- ... all panels must light up when the main switch is turned on
- ... no sign of alteration on outside

6. CONTENT OF FINISHED PRODUCT

For some performances, the standard may be the content of the finished product. For example:

- ... Given results of a task analysis, write a performance objective to include behavior, conditions, and standard.
- ... Given a typical management problem, write a report to include at least three recommended solutions.

7. TIME LIMITS

For certain tasks, a time limit may be included as the standard. For example:

- ... Given a car parked on concrete and tire changing tools, change a tire within 10 minutes.
- ... Provided disassembled components of a BR42 carburetor, assemble the carburetor within 45 minutes.

8. ADJUNCT STANDARD

For many performances, these are written standards or procedures which may be used as the standard. An example is: "...sparkplug gap must be in accordance with those in manufacturer's manual." CAUTION: Make sure the written source does set a standard, instead of merely giving directions for a procedure.

9. WITHOUT ERROR

Occasionally, will encounter a task performance for which errors are not permitted, even in a training situation. In such cases, the standard is simple states as "without error" or "no errors permitted."

• GUIDELINES FOR WRITING PERFORMANCE OBJECTIVES

1. GENERAL GUIDELINES

- ... Assemble all of your completed task work-sheets so that you can use them as your working documents.
- ... Determine how many performance objectives you need for each task. Usually, only one is required if the task has been carefully written.
- ... Using the task worksheet, develop your performance objectives.

2. STATING BEHAVIOR

Following the performance indicated on each task worksheet, consider each statement of behavior you write to insure that it complies with the following:

- ... Stated behavior must be observable.
- ... The behavior as stated must be measurable.
- ... It must not leave room for different interpretations.

3. WRITING CONDITIONS

In addition to the previous rules on writing conditions, you should also insure the following:

- ... Each stated condition matches the job as closely as possible.
- ... Each stated condition is as realistic as possible.

3. WRITING CONDITIONS (continued)

- ... Application of the conditions is within manageable limits.
If, for example, you write "Given vehicles with inoperative transmissions..." would that be possible during the training?

4. WRITING STANDARDS

- ... Make sure each standard conforms as closely as possible to the proficiency required by the job.
- ... Write a standard that is attainable.
- ... Write a standard that can be clearly understood by all raters.
- ... Write a standard that will clearly indicate student achievement on a pass/fail basis.
- ... Whenever possible, develop a standard based on the quality of the product.

REQUEST FOR V-TECS CATALOGS

SCHOOL _____ DATE _____

TRAINER FACILITATOR _____

DATE NEEDED FOR WORKSHOP INSERVICE _____

TRAINING PLAN SUBMITTED? _____

	<u>INSTRUCTOR NAME</u>	<u>COURSE AREA TAUGHT</u>	<u>CATALOG(S) REQUESTED (TITLE)</u>
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			



BERKS VOCATIONAL-TECHNICAL SCHOOL

AN EQUAL OPPORTUNITY EMPLOYER

2900 St. Lawrence Avenue
Antietam Valley Center
Reading, PA 19606
(215) 779-7111

MEMORANDUM

TO: Robert Kreider
Robert Hill

FROM: Doris M. Epler *DME*

RE: Do All Educational Courses

DATE: November 19, 1980

Mr. Terry Mell of Do All Corporation will be at Antietam on Wednesday, December 3 to give us a demonstration of the Do All television/workbook courses. Since you are already scheduled to be at Antietam that day to work on C.B.V.E., we will not have to make any schedule changes.

Mr. Mell will be confirming this appointment with me on Monday, December 1, so if any conflict should arise I will be in contact with you. He has also agreed to investigate the possibility of discounts on the materials since we are involved in the articulation project with Reading-Muhlenberg and Schuylkill County.

DME/gd

cc: J. Loomis
E. Zabinski
H. W. Fisk
R. Hertz



BERKS VOCATIONAL-TECHNICAL SCHOOL

AN EQUAL OPPORTUNITY EMPLOYER

2900 St. Lawrence Avenue
 Antietam Valley Center
 Reading, PA 19606
 (215) 779-7111

MEMORANDUM

TO: Dr. Carroll Curtis
 H. William Fisk, Jr.

FROM: Doris M. Epler *DME*

RE: C.B.V.E. Kentucky Study Tour

DATE: April 7, 1981

As you are aware, I attended the "Study Tour of Exemplary Programs: Serving All Students Through Competency-Based Vocational Education" held in Ft. Mitchell, Kentucky from March 31 to April 2, 1981. The visitation sites included in this program were Northern Kentucky Vocational School, Chapman Academic-Vocational Project and Kenton County Area Vocational Education Center.

Most AVTS's in Kentucky are owned and operated by the State and, as such, teachers are State employees. There, some latitude exists within their operational procedures which could not apply to B.V.T.S. A good example of this is that they were able to "transfer out", those vocational teachers who did not desire to participate in the C.B.V.E. approach to more traditional sites!

The administrative staffs, for the most part, were relatively young but the mix of academic/vocational staff, ALL using a competency-based approach appeared to be functioning beyond expectations. However, not all classes were fully C.B.V.E. implemented and they feel they have several years to go to reach their objectives. I do feel however, that our module form and design is superior to any I saw in Kentucky. I was very impressed with the friendliness exhibited by the staff and the students wherever we went. As I wandered around the schools, not one student passed me without a cherry "hello". This was very heartwarming.

The staff emphasized that we should place a high priority on C.B.V.E. to ensure the continual development and eventual implementation of this approach. Also, Mr. Raymond Barber, Superintendent of Public Instruction and Mr. Robert Spillman, State Director of Vocational Education, both of the Kentucky Dept. of Education, stressed in their addresses to our group, that they were giving their full support to C.B.V.E. This is vital to their overall effort and I hope that we can somehow get similar support from P.D.E.

I wish to take this opportunity to thank you for granting me permission to attend this study tour and to Dr. Carroll Curtis, Research Coordinating Unit of the Bureau of Vocational Education for supplying the funds which made my participation possible. The National Academy supplied us with well organized notebooks of supportive materials which are in my office and are available for your perusal any time.

DME/gd

cc: R. Hertz
 J. Grande
 E. Lyba



BERKS VOCATIONAL-TECHNICAL SCHOOL

AN EQUAL OPPORTUNITY EMPLOYER

2900 St. Lawrence Avenue
Antietam Valley Center
Reading, PA 19606
(215) 779-7111

MEMORANDUM

TO: Robert Gettis
E. J. Zabinski
D. Foellner
G. Baker

FROM: Doris M. Epler

DATE: March 24, 1981

At our recent in-service meeting, a suggestion was made that the slide presentation on C.B.V.E. which was developed by Rein Buerkert and Harry Stuebner be shown at our next group Craft Advisory dinner in September.

The teachers have also requested that they be able to preview this presentation during a lunch time faculty meeting so that they could be familiar with the program in order to be better able to answer questions from the craft committee members. I feel both suggestions are excellent and I will be happy to assist in scheduling this fine presentation.

Please feel free to contact me at Antietam to make the necessary arrangements.

DME/gd

cc: R. Hertz
H. W. Fisk
C. Franklin
L. Moore

BERKS VOCATIONAL TECHNICAL SCHOOL

CRAFT ADVISORY TASK APPROVAL SHEET

VEMIS CODE _____

LOCAL TITLE _____

(NAME)

	CRAFT ADVISORY MEMBER	INSTRUCTOR	BVTS ADMINISTRATOR	FORMER STUDENT	PARENT	COMMUNITY MEMBER

We have examined the attached list of tasks and agree that they represent the DOT's identified as indicated by the check marks ✓. We feel that the tasks represent the occupational skills and technologies as found in the field today.

BERKS VOCATIONAL-TECHNICAL SCHOOL

S T E P

VEMIS CODE _____ LOCAL TITLE _____

We have examined the attached course description and have concluded the following:

- _____ Accepted as presented
 _____ Accepted with indicated change
 _____ Rejected. (Please attach rationale)

(NAME)

	CRAFT ADVISORY MEMBER	INSTRUCTOR	BVTS ADMINISTRATOR	FORMER STUDENT	PARENT	COMMUNITY MEMBER

COMPETENCIES

- | | |
|--|---|
| 1. Define consumers. | <u>Available materials</u>
Proctor & Gamble kit. |
| 2. Identify consumer rights and principles.
Define which are protected by law. | |
| 3. Describe various types and sources of consumer information. | County Extension Agent's pamphlets. |
| 4. Define advertising and its role in product development. | Proctor and Gamble kit. |
| 5. List types of advertising. | Laminated ads. |
| 6. Define fraud and list types of false advertising. | |
| 7. Define budgeting. | |
| 8. Develop individual and family budgets. | |
| 9. Define inflation. | |
| 10. Identify ways to protect against inflation. | |
| 11. Describe goals involved in making a budget. Identify values in budgeting and consumerism. | Values Clarification exercises. |
| 12. Identify sources of credit and ways to establish credit. | |
| 13. Identify how to apply for a credit card/ | |
| 14. Identify the pros and cons of using a credit card. | |
| 15. Identify banking services, checking, savings, and banking services for one fee. | |
| 16. Define insurance. | |
| 17. List types of insurance. | |
| 18. Identify benefits of each type of insurance. | |
| 19. Identify how to determine what insurance is best suited for the student's needs. | |
| 20. Define the term lease. | |
| 21. Identify how to read and understand a lease. | |
| 22. Construct a checklist to use when apartment hunting. | |
| 23. Evaluate opportunities in military service. | Guidance Counselor as resource person. |
| 24. Identify where to look for a job. | Singer Job Survival kit; |
| 25. Learn job interviewing skills and employer expectations. | Bill Ryan, East Center |
| 26. Identify considerations to be made when buying a new or used car. | |
| 27. Identify pitfalls to avoid in obtaining auto repairs. | |
| 28. Identify need for legal services and how to shop for them. | |
| 29. Identify how to purchase health and personal care services. List consumer rights in health care. | |
| 30. Set goals for retirement. | |

JOB SEEKING/KEEPING MODULES

1. Investigate Your Value System and How It Affects Your Job Performance
2. Investigate Employer-Employee Relationships and Analyze Your Own On-The-Job Attitudes
3. Organize Personal Data Pertinent to a Job Interview
4. Prepare a Resume
5. Write a Letter of Application
6. Complete Application Blanks
7. Participate in a Mock Job Interview
8. Consider the Job Offer



(APPENDIX N)

Lehigh County Vocational-Technical School

Serving: Allentown, Catasauqua, East Penn, Northern Lehigh, Northwestern Lehigh, Parkland, Salisbury, Southern Lehigh, Whitehall, Coplay

2300 MAIN STREET
SCHNECKSVILLE, PA 18078
PHONE 799-2300

April 30, 1981

Ms. Doris Epler
Berks County Intermediate Unit #14
Antietam Valley Center
2900 St. Lawrence Avenue
Reading, PA 19606

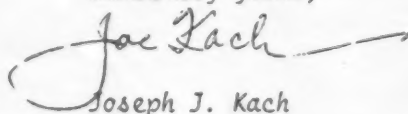
Dear Doris,

Please accept my deepest appreciation for the courtesies extended to Bob Demkovitz, Ray Laudenslager and myself on our recent visit to the Berks County Vo-Tech School, West Center. Finding the time in your personal schedule to be with us and discuss the Related Math Program is appreciated all the more, knowing how difficult it is to find the time to do all the things expected of you.

Your help in describing the program and promise of developed materials will go a long way in assisting us to develop a more comprehensive Related Math Program which will help our students and assist our instructional staff.

Thanks again for your consideration on our behalf.

Sincerely yours,


Joseph J. Kach

JJK:bea

An Equal Opportunity and Affirmative Action Institution



GUIDELINES FOR
DUPLICATING/PRODUCING
INSTRUCTIONAL
MATERIALS

**Let's follow
the proper procedure!**

BERKS VOCATIONAL-TECHNICAL SCHOOL

September 2, 1980



Established guidelines and
procedures are what make it
possible to work as a team—
which means greater
productivity for all of us.



Part of our efforts towards "1980-81, The Year of Positive Professional Growth", includes defining the criteria which must be met for all work duplicated for instructional purposes. We will NO longer permit duplication of materials which do not meet the following guidelines:

1. IDENTIFICATION: ALL materials must be properly identified. This must include:

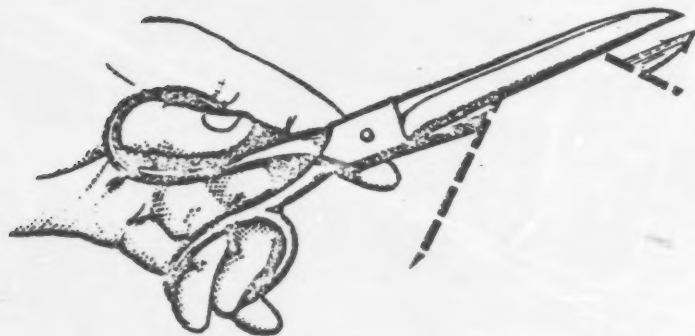
- a. BERKS VOCATIONAL-TECHNICAL SCHOOL
- b. Program area name
- c. Classification code (See Appendix A)
- d. Proper citations

MATERIALS SHOULD NOT INCLUDE THE FOLLOWING:

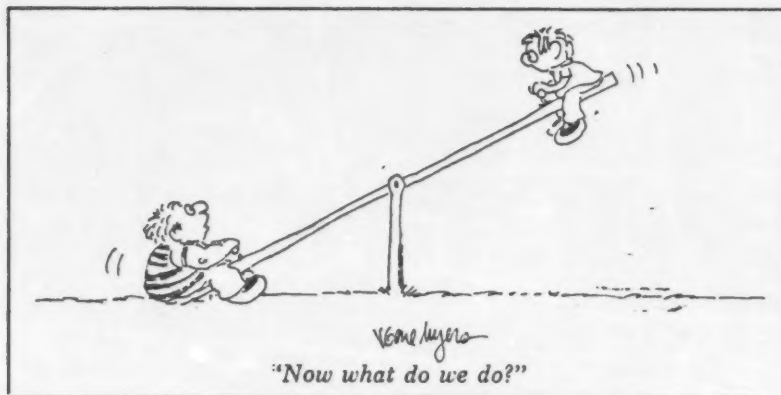
- a. Instructor name
- b. Center name
- c. Copyrighted materials unless it meets the specifications as outlined in Appendix B

2. MAGAZINE AND/OR JOURNAL ARTICLES:

Mass reproduction of such items as magazine or journal articles WILL NOT be permitted. Articles considered for duplication should:



- a. Be perused for acceptability within the approved curriculum.
- b. Be "cut and pasted" to create a professional look and to encourage motivation.
- c. Be supported with planned feedback from the students such as worksheets, projects, reports, displays etc. This should be done BEFORE a test is administered on the content of the articles.
- d. Be cited properly. You may use A.P.A., Tauber, or any other recognized method for citing articles.
- e. Be realistic in your requests for numbers of copies. Asking for 50 copies of an article may be unrealistic because:
 - (1) the section of the curriculum to which the article applies
 - (2) the technology within the article



3. PLANNING INSTRUCTIONAL MATERIALS:

Be conscious, at all times, of trying to make your materials appealing. Line after line of written words of theory, without any visuals or planned interactions and feedback, does little or nothing to help to motivate the student to read the material. Keep a "look-out" for pictures in magazines, newspapers, brochures etc. which will help to "liven-up" your instructional materials. Start to collect these items and soon you will have appropriate pictures for almost any idea you hope to get across.

Therefore, with proper planning, you should have no need for hand written tests or information sheets. If you need a typist, the work can be accomplished in the Word Processing Department, but remember, to use this service, you MUST plan ahead. The instructor who dittos a test on Thursday to administer on Friday, certainly can not ascertain that the test is valid or reliable. Good testing, fair testing, and testing which is not only valid but also reliable, is not an easy task nor can it be accomplished without GOOD PLANNING. For further information on testing, please refer to the CURRICULUM handbook.

4. PROOF-READING:

Be sure that you proof-read your materials for organization, structure, grammar and spelling. You can not expect students to pay much attention to work which is shoddy or indicates that the instructor did not take much time to prepare the materials. Therefore, if the materials were not that important to the instructor, why should they be important to the students?

5. CHOICE OF SERVICES:

There are many types of services for duplicating instructional materials which are available to all teachers. You should choose the one which will produce the desired results, while at the same time, be cost-effective and economically feasible for our budget!



(a) Ditto:

Regular - these are available in the main office and you will find a ditto machine and paper in the faculty room.

Infra-red - if you have copy which is dark and in good condition, a ditto master can be made at Antietam on the infra-red machine and then you can run copies on the ditto machine in the faculty room. This service is especially good for illustrations and/or diagrams which would be time consuming to replicate. If you desire this service, please request a form in the main office, fill it out properly, have it noted by the office staff and then forward both the form and the copy to the Curriculum Office. The ditto and the original copy will be returned to you in less than 1 week.

(b) Zerox:

This service should only be used for emergency purposes and then it should be limited to six (6) copies. THIS IS AN EXPENSIVE SERVICE! With proper planning, you can save many dollars by choosing a less expensive method of reproduction. If this service is desired, please present the copy to the office staff and they will handle your request. DO NOT SEND STUDENTS TO THE OFFICE WITH INSTRUCTIONS TO WAIT FOR COPIES! Our office staff carries many responsibilities and their time is limited. Be considerate, PLAN AHEAD!

(c) 9200-Antietam:

This service offers many options such as collating, stapling, double-sided reproduction, different colored paper etc. In order to use this service, please follow this procedure:

- (1) Prepare all of your materials as specified. USE GOOD COPY ONLY!
- (2) Ask for a reproduction form in the main office.
- (3) Fill out ALL of the appropriate columns. It is your responsibility to count the number of sheets you have, determine the number of copies, the total count, paper etc. NOTE: Please do not ask for colored paper to be double-sided! The present stock of colored paper does not lend itself to this service.
- (4) Give the form and the copy work to one of the staff members in the office.

- (5) All requests will then be forwarded to the Curriculum Office for approval.
- (6) After approval, the work will be sent to the copy center and upon completion, the work will be sent directly to the person requesting the service.

(d) Dry Mounting:

This service is especially good for pictures, charts, diagrams, etc. which you would like to keep to display more than one time. The item will be centered on a piece of heavy stock and dry mounted which will make it more suitable for bulletin board displays or heavy use. To get this service please request a form in the main office, fill out the form properly, have it noted in the office, and send the item and the form to the Curriculum Office and we will process your request.

(e) Lamination:

This service is good for items you wish to protect from grease and dirt. Wall charts, nomenclature diagrams, procedural charts or maps, are all good items to have laminated. To get this service, please request a form in the main office, fill the form out properly, have it noted in the office, and send the item and the form to the Curriculum Office and we will process your request.

(f) Transparencies:

Transparencies can be made from good dark copy. If you design your own materials, please be sure to use black india ink or another light resistant ink. Some trade magazines, such as School Shop, have tear-outs specifically for transparencies. To get this service, please request a form in the main office, fill out the form, have it noted in the office, and send the item and the form to the Curriculum Office and we will process your request.

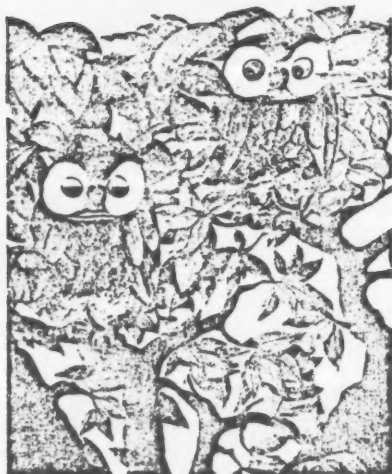


(g) Microfische:

We have many reports, curriculum materials, articles etc. on microfische (See Appendix C). We also have two (2) portable microfische readers which you may borrow on a short term basis. At Antietam, we also have a large stationary microfische reader which has the capability of producing hard copy. If you wish to borrow microfische and/or a portable reader, please fill out the appropriate form which is available in the main office. If, after perusing the microfische, you wish to have hard copies made of certain pages, return the microfische and reader to the office with the appropriate request form and we will have the hard copies made for you. Keep in mind however, that the hard copy will be light and not appropriate for further duplication.

(h) In-house duplication:

The Print Shop in both centers can be utilized for some reproduction work. Keep in mind however, that these requests are subject to the approval of the instructor and, since it is a learning experience, there may be times that schedules can not be adhered to. If the instructor agrees to handle your request, please fill out the appropriate form and turn the request over to the office staff. They will handle the request for you.



BE WISE!
WITH GOOD PLANNING,
WE CAN ECONOMIZE
AND
HAVE GOOD
INSTRUCTIONAL
MATERIALS.....



BERKS VOCATIONAL-TECHNICAL SCHOOL

AN EQUAL OPPORTUNITY EMPLOYER

2900 St. Lawrence Avenue
 Antietam Valley Center
 Reading, PA 19606
 (215) 779-7111

CODING SYSTEM FOR C.B.V.E. MATERIALS

The code for identification of C.B.V.E. materials will consist of 10 digits as follows:

XX Cluster Number
 XXX Program Number
 XXX Terminal Performance
 XX Enabling Performance

CLUSTERS:

All programs have been placed in one of ten clusters. The programs were grouped where it was felt that they were related in purpose or intent and/or there is a possibility of transferability of materials between programs. These clusters are as follows:

01 Drafting
 02 Transportation/Mechanics
 03 Building Trades & Supportive Trades
 04 Food/Health/Personal Services
 05 Communications
 10 Mathematics
 20 Job Seeking/Job Keeping
 30 Consumerism
 40 Affective: Attitudes/Awareness/Values
 90 Special Needs

PROGRAMS:

All programs have been given a 3 digit identification number. These are:

010 Air Conditioning/Refrigeration
 020 Agriculture Mechanics
 030 Appliance Repair
 040 Architectural Drafting
 050 Auto Body
 060 Auto Mechanics
 070 Building Construction
 075 Building Maintenance
 080 Career Chemistry
 090 Carpentry
 100 Child Care
 110 Clothing and Textiles
 120 Communications Media
 130 Cosmetology
 140 Data Processing
 150 Dental Assistant
 155 Diversified Occupational Education

APPENDIX A (page 2)

160	Electricity
170	Electronics
180	Food Preparation
190	Foundry
200	Health Assistant
210	Machine Design Drafting
220	Machinist/Toolmaker
240	Masonry
250	Merchandising
260	Painting & Decorating
270	Plumbing
280	Printing
290	Welding
500	Special Needs, Construction
510	Special Needs, Driver Training
520	Special Needs, Home Economics
530	Special Needs, Horticulture
540	Special Needs, Mini Skills

The following list identifies the programs which have been placed in the various clusters:

<u>CLUSTER</u>	<u>PROGRAMS</u>
01	040,210
02	020,050,060
03	010,030,070,075,090,160,190,220,240,260,270,290, 500,530
04	080,100,110,130,150,180,200,250,520
05	120,140,170,280
10	600 = General Mathematics 700 = Algebra 800 = Geometry 900 = Trigonometry 999 = Calculus
	NOTE Shop related Math will carry the cluster # of 10 but the program # will identify the specific program area.
20	Each program area will choose the competencies within these clusters which are needed or desirable for the specific program area.
30	
40	
90	510,540
ALL	155 ..D.O.E. can be in any cluster depending upon the career goal of each student

TERMINAL PERFORMANCE:

Each terminal performance within each program area will be numbered sequentially. These may be placed in either the order in which the student will be progressing through the program, or numbered by units. Each program may make this decision, but the process will be the SAME in similar courses at both the East and West centers.

ENABLING PERFORMANCE:

Each enabling performance under each terminal performance will be numbered sequentially in the order in which the student must progress in order to achieve the terminal performance



BERKS VOCATIONAL-TECHNICAL SCHOOL

AN EQUAL OPPORTUNITY EMPLOYER

2900 St. Lawrence Avenue
Antietam Valley Center
Reading, PA 19606
(215) 779-7111

MEMORANDUM

TO: All Instructors
FROM: Doris M. Epler *DME*
RE: Substitute Information
DATE: February 6, 1981

Last Fall, we were examining the attached form to try to determine it's usefulness in our C.B.V.E. project. We did not meet formally to discuss changes, additions and/or deletions. We have decided to use this form as a "working copy" and field test it's overall applicability to our program. Your input is sought and recommendations should be forwarded to the Curriculum Department at Antietam.

All teachers who are scheduled to be released for C.B.V.E. work should fill in the form to the best of their ability and relativity to the shop area. This should be placed on the desk for the convenience of the C.B.V.E. substitute teachers. Joanne Longenecker has been assigned to the West Center and David Dierolf to the East Center.

Close communications between you and your C.B.V.E. sub must be maintained at all times in order to ensure as smooth a transition from regular teacher to substitute teacher as possible.

Please take the time to orientate your students to the fact that they are coming in and that they will be teaching short theory lessons on consumerism skills. Your positive attitude is a must if these teachers are to be effective in maintaining discipline and presenting this much needed information.

Joanne and David will be completing a form for your benefit to reiterate the activities which took place in your absence. This will allow you to recognize various achievements of your students and correct any discipline problems.

Together we can proceed with our C.B.V.E. project with as little interruption to the learning process as possible. Thank you for your cooperation.

DME/gd

Attachment

cc: R. Hertz	E. Zabinski	J. Loomis	S. Speece
H. W. Fisk	G. Baker	D. Foellner	J. Casper

SUBSTITUTE INFORMATION **WORKING COPY**

INSTRUCTOR: _____

SHOP: _____

DATE: _____

- 1) RECOMMENDED STUDENT SUPERVISOR: A.M. _____
P.M. _____

- 2) MATH TIMES (Enclose schedule if necessary)

1st LEVEL.....TIME: _____

2nd LEVEL.....TIME: _____

3rd LEVEL.....TIME: _____

- 3) CLEAN UP TIMES: A.M. _____ P.M. _____

- 4) DEPARTURE TIMES _____ (If different from regular schedule)

- 5) KEYS: What students (if any) are allowed to use instructor's keys?

A.M. _____ P.M. _____

IDENTIFY KEYS (Label description) SPECIFICS ON PROBLEM LOCKS

NUMBERS: # _____ # _____ # _____
_____ # _____ # _____

- 6) APPROPRIATE SHOP ATTIRE _____

- 7) PRIVILEGES ALLOWED _____

MUSIC _____ FOOD/GUM _____ LEAVING SHOP _____

VISITING/BEING VISITED BY OTHER SHOPS/STUDENTS _____

- 8) MACHINES:

What materials/tools are not to be used _____

What records are to be kept? (Materials used, tools used/missing, sign out/in sheets,
tools used/missing,
work completed) _____

- 9) LOCATION OF JOB ASSIGNMENTS _____

- 10) UNACCEPTABLE PROJECTS/PROCEDURES _____
CONSEQUENCES: _____

- 11) SUPPLEMENTARY WORK FOR IDLE STUDENTS (ie. readings, worksheets, cleaning, work received from another shop, etc.) _____

- 12) WHAT IS THE RESPONSIBILITY OF FOREPERSON? TOOL INVENTORY _____
CLEAN-UP COMPLETED _____ CONDUCT OF STUDENTS _____
OTHER _____
- 13) ANY OTHER INFORMATION THAT WILL INCREASE SHOP EFFICIENCY _____
